



Government of Tamilnadu

SCIENCE

III Standard

**Untouchability
Inhuman - Crime**

Department of School Education

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What these **Icons** stand for!



Shall we classify!



Let us do!



Let us collect!



Project



Let us think!



Let us write.



Let us draw/colour.



Let us find!



Fact.

1.

OUR COLOURFUL GARDEN



Dheepak and **Sumathi** like to grow plants. A few days back, each of them planted a flowering plant each in their garden. They used to go to school only after watering their plants. Once, they went to their grandparent's house to enjoy the village fair for a weekend.

When they came back, they were shocked to see their plants withering away. Dheepak felt very sad and asked his father, "Why have these plants dried up?" "No one watered the plants in our absence," father replied.

Sumathi had something to ask, "Will the plants die, if we don't pour water?" "Yes ofcourse," came the reply. "Father, plants don't have mouth. How do they drink water?" asked Dheepak.

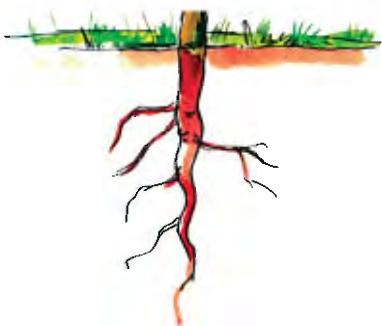
Father answered with a smile, "We drink water through our mouth; the plants absorb water through their roots. Plants absorb minerals also along with water. They supply water to all parts of the plant through the stem. It helps in the growth of the plant."

Sumathi asked her father, "What does the root look like?" Father uprooted a grass, and started describing it.



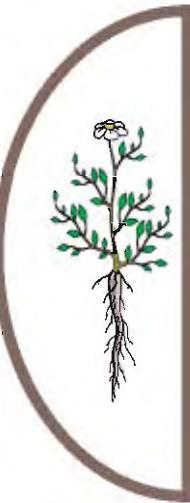
- The part of the plant found below the soil is the root system.

Root :



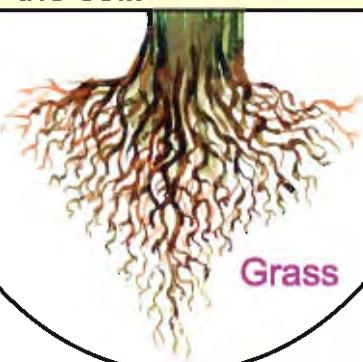
- It firmly fixes the plant to the soil.
- Plants absorb the minerals needed for growth from the soil, along with water.
- Certain plants store food in their roots.

Sumathi uprooted a Leucas (thumbai) plant. She found the root of thumbai different from the root of grass. Father explained the difference. "The root of grass belongs to **fibrous root system**. It arises from the base of the stem as a bunch. But Thumbai root is different. It belongs to **tap root system**. In tap root system the main root goes deep into the soil to fix the plant firmly in the soil".



Fibrous root system

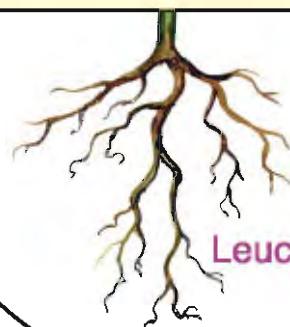
- It is found as a cluster at the bottom of the plant.
- It is not rooted deep in the soil.



Grass

Tap root system

- In this type the main root grows like a nail.
- It is rooted deep in the soil.



Leucas

Dheepak asked his father, "The carrot is also found under the soil. Is it a root?" "Yes, some plants store food in their root" answered his father.

Plants that store food in their roots.



Radish



Carrot



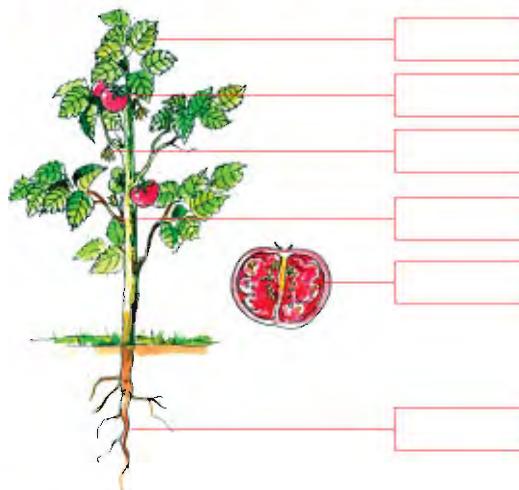
Beetroot

Dheepak and Sumathi were thrilled to know about the roots. They wanted to know about the other parts of the plant, as well. Their father started explaining about the stem, leaf, fruits and seeds.



Let us write :

Shall we label the parts of the plant in the picture!



The stem :



- ★ Stem is the part of the plant seen above the soil.
- ★ It holds the leaves, the flowers and the fruits.
- ★ The leaves grow from its nodes.
- ★ Certain stems are found below the soil and help in the storage of the food.

Example. : Turmeric.

Plants that store food in their stems

Turmeric	Potato	Ginger



The Leaf :



- Different plants have leaves of different shapes and colours.
- Leaves are of two types: The simple leaf and the compound leaf.
- Leaves have chlorophyll. It helps the plant to prepare its own food.



Shall we classify !

Leaf	Stalk found/ not found	Simple/ Compound	Leaf	Stalk found/ not found	Simple/ Compound





Let us do!

In groups, collect different types of leaves.

Form a group and draw the outline of the leaves in a chart paper.



Shall we colour every leaf with suitable colours ?

Flower :



- The most beautiful part of the plant is the flower.
- Flowers are also of different shapes and colours.
- Some are even multi coloured.





Let us do!

- Collect different types of flowers.
- Let us discuss the size, the shape, the structure and the colour of the flowers you have collected.

Name of the flower	Size (Small/ Big)	Colour	Stalk (present/ absent)	Fragrance (felt/ not felt)	Structure (Single/ Cluster)

Facts



- The flower that blooms once in 12 years is KURINJI.
- The flowers which bloom in the night are white in colour and they have attractive fragrance.

The Fruit :

- Flowers turn into fruits.
- Fruits differ in their colour, shape, taste and smell.
- Seeds are found inside the fruits. There may be one or many seeds.
- Seeds also differ in their shape, nature and texture.
- A baby plant arises from the seed.



Which are the fruits you like, in the picture given? Why?

Can you name the fruits seen in the picture?



1. Let us do !



Form a group and observe the cross section of fruits like mango, papaya, pomegranate, mosambi, guava, Chikoo, Pineapple, water melon etc., and fill the table given below.

Name of the fruit	Number of seeds (single / many)	Nature of seed (soft/hard)	The Diagram of the seed

2. Let us do !



Take ten numbers of any one of the following - beans, peas, hyacinthbean or dried pea.

Peel the pod, count the number of seeds and record the result in the given table.



Peas	Number of seeds										
	<input checked="" type="checkbox"/> 6	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9	<input type="checkbox"/> 10

- Is it possible for you to find out the number of seeds before peeling the pod?
- How many peas have the same number of seeds?



Shall we classify!



Root	Stem	Leaf	Flower	Fruit	Seed



Water plants :



Some plants adapt themselves to live in water.
They either float on or remain submerged in the water.

- They have short roots.
- They have cavities in the stem and leaves to float.
- Stomata are small holes on the leaf surface which help in transpiration. They also help them adapt to live in water.

Water plants are also called hydrophytes



Floating plants
e.g : Eichornia



Fixed with long roots
e.g : Lotus



Submerged
e.g : Hydrilla

Who is he?



Jagadeesh
Chandra Bose

He is the Indian scientist who discovered that plants have life cycle and feelings as animals.



Evaluation :



a. Let us write :

1. S_NF ___ ER	5. C_L ___ P_LL
2. CH_Y ___ N_HAM_M	6. G ___ G_R
3. L_T_S	7. T_R ___ R_C
4. V_LL_S ___ R_A	8. P_AS

b. Using the letter given below try to frame the names of some flowers.

(L, N, J, O, T, A, S, U, S, S, M, I, R, O, E, S, E, S, H, I, N, B, F, I, S, O, I, W, C, E, U, S, R)

1. LILLY

3. _____

2. _____

4. _____

c. Create some images using different types of leaves as shown in the picture.



d. Let us think:



1. Why do some plants have fibrous root and some plants have taproot?
2. How does the plantain reproduce without seed?



e. Collect some Tamil proverbs regarding plants.

1. வாழேயால் வாழேயாம்.

2. _____

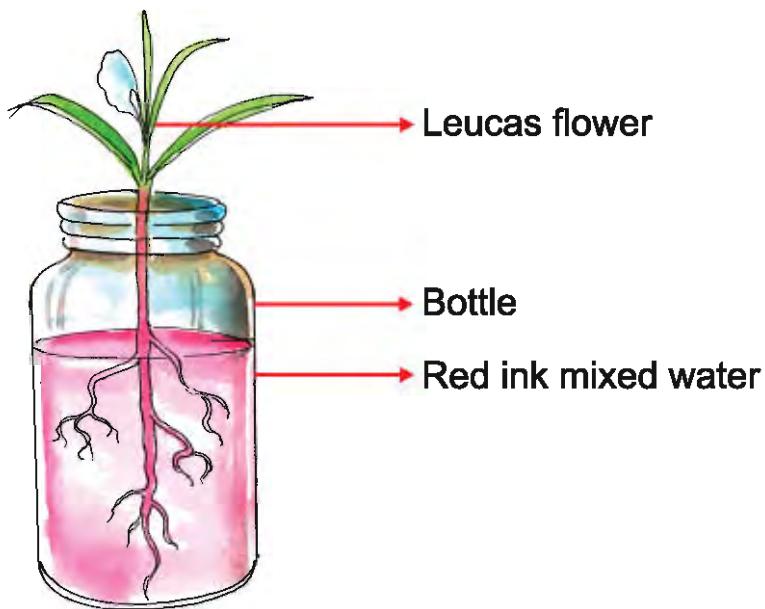
3. _____



f. Let us do ...
Young scientist!

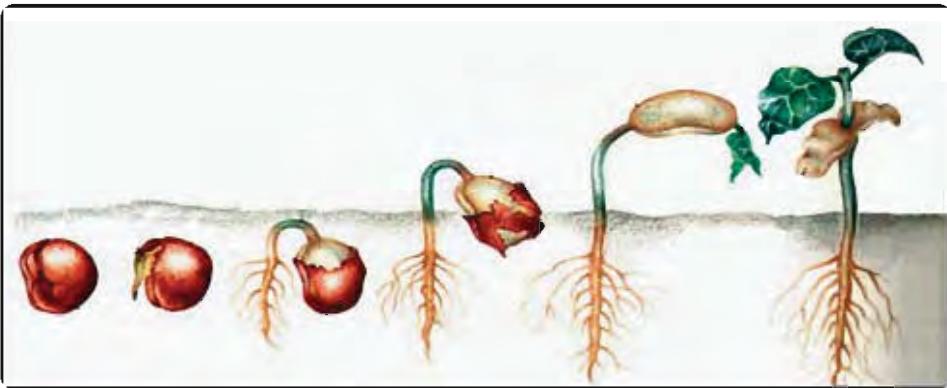


1. Leave a rooted Thumbai (Leucas) plant in a bottle having red ink mixed water as shown in the picture.
2. Observe the plant after a while and record your observations.

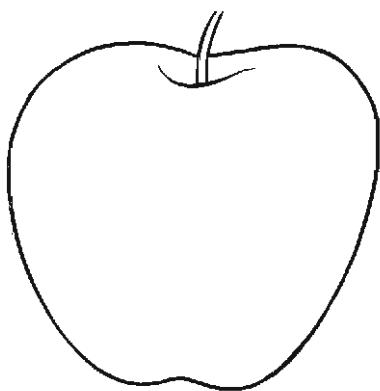
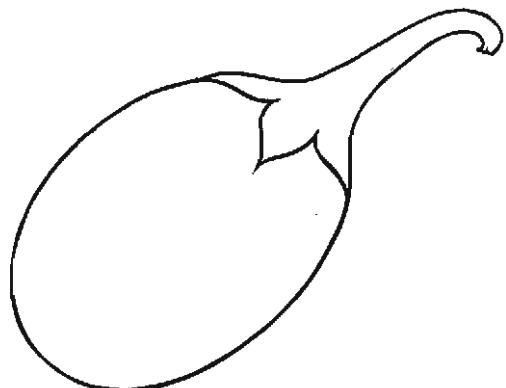
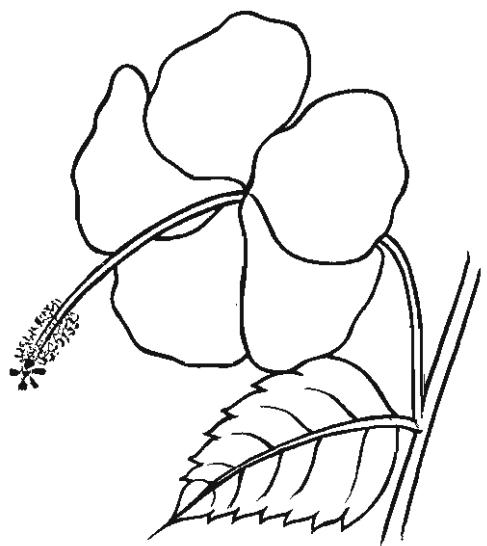
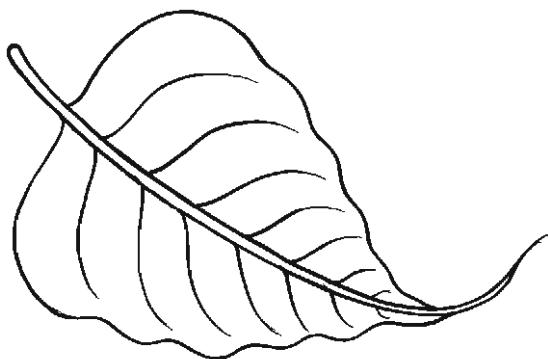


g. Project:

Form a group and observe the germination of bean seed.



h. Colour the following :



2.

ANIMALS AROUND US



We see a lot of animals and birds in the picture. Don't we!

List out the names of the animals and the birds in the picture.

- ♦ Which are the birds found in water?
- ♦ Name the animals that crawl.
- ♦ Which is the biggest animal in the picture?
- ♦ Which is the smallest animal in the picture?
- ♦ Name the animals that feed on plants.
- ♦ Name the animals that feed on other animals.
- ♦ Name the animals that feed on both plants and animals.



- ◆ Name the birds which can be kept and grown at home.
- ◆ Have you seen any animal in a Zoological park? Name a few.
- ◆ Name some pet animals kept and grown at home.

Let us swim ...

Have you seen fish swimming in water? Come on, let us see the fish tank and watch how a fish swims in water.



Can you see? Fishes use their boat shaped body to swim in water. Can you notice something moving in their body. They are fins. They help the fish to move forward. In this small tank, these fish are able to turn around and move. The tail helps the fish to change their direction.

Can you notice a cover opening and closing near the head? It is gill cover. Gills are present inside the gill cover. They help the fish to breathe.

1. Fishes have _____ shaped body.
2. They can change the direction with the help of _____.
3. They can swim with the help of _____.
4. They can breathe with the help of their _____.



Let us hop ...

Have you seen frogs? They live in both land and water. Do you know how they live? When they are on the land they take in air through the nostrils into the lungs and breathe. Frogs use their skin to breathe when they are in water. They use their hind legs to hop on land. The web present in the hind legs help them to swim in water.



1. Frogs use _____ to breathe in land.
2. They use _____ to breathe in water.
3. _____ is used to hop.
4. They swim in water using their _____.

Let us fly ...



See the bird flying in the sky. It flies as if it were floating on water. What are all the things needed to float on water? Things that are lighter float on water. Yes, the body of bird is boat shaped; it is of less weight. Their bones are hollow and light. Like fish, birds also use their tail to change their direction. They use their wings to fly.

1. The birds have _____ bones.
2. They use _____ to fly.

Facts

- ◆ The dove flies the longest distance.
- ◆ The ostrich is fastest running land bird.



All birds are not similar. Why?

Based on their feeding habits, birds and animals have different types of beaks, teeth and legs.

Beaks



Have you seen the woodpecker?

The strong pointed beak of the woodpecker helps it to make holes on the trees where they get worms from.

Sparrow...

The short beak of the sparrow helps it to feed on insects.



Parrot's beak...

The parrot has a hooked beak to crack seeds, nuts and fruits.

Duck...

The flat short beak of the duck helps it to separate its food from water.



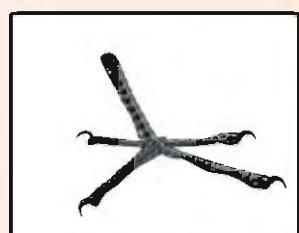
Eagle's beak...

Their sharp and hooked beaks help them tear the flesh of the dead animals.

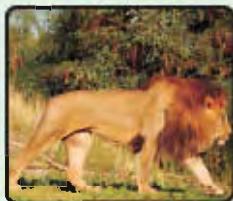


Feet and claws...

- ◆ Have you seen the water birds, like ducks, which have webbed feet? They swim in water with the help of their webbed toes.
- ◆ The strong feet and claws of the eagle and the owl help them hold their prey. They are used to catch hold of their prey as they swoop down from great heights.
- ◆ Many birds have four toes. Among them, a few have three toes in front and one at the back. Others have two in front and two at the back. This helps the birds to hold the branch of the tree firmly.



Do birds and animals live and remain in the same place?



Birds and animals move from place to place in search of food and shelter. They move using wings, legs or fins.



'Hide and seek' of animals

Certain animals, in order to protect themselves from predators, adapt with the environment. It is called camouflage.

What are the animals hidden in the picture?



Leaf insect



Chameleon



Stick insect



What do animals eat?

Look at me find out my food.

Animal	Food	Food	Animal
A kingfisher is shown perched on a branch, with its beak open as if it has just caught a fish.	_____	A zebra and a lion are shown in a grassy field. The zebra is black and white, and the lion is orange and black.	_____
A hummingbird is shown in flight, with its long beak extended towards a red flower.	_____	A robin is shown perched on a branch, with its beak open as if it has just caught a worm.	_____
A squirrel is shown eating a nut.	_____	A duck is shown swimming in water, with its beak open as if it has just caught a fish.	_____
Two deer are shown grazing in a grassy field.	_____	A blue jay is shown perched on a branch, with its beak open as if it has just caught a worm.	_____
A blue jay is shown perched on a branch, with its beak open as if it has just caught a worm.	_____	An elephant is shown walking in a grassy field.	_____



Based on the food they eat, animals are classified into three types.

Animals that feed on plants are called **herbivores**.

These animals have flat short, front teeth and large jaw teeth to chew the leaves.



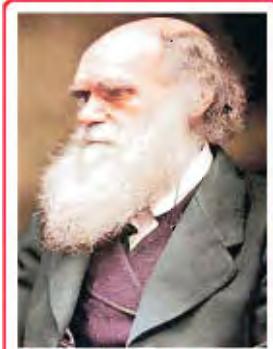
Animals that feed on the flesh of other animals are called **carnivores**. They have sharp and pointed claws and teeth to tear the flesh.



Animals that feed on both plants and animals are called **Omnivores**.



Who is he ?



Charles Darwin

He did various observations with animals and proved that man evolved from apes-the monkeys.

Evaluation:



a. Let us write :

1. Animals that live on land _____, _____, _____.
2. Animals that live in water _____, _____, _____.
3. Animals that live on trees _____, _____, _____.



b. Shall we find out the food and shelter of these birds.

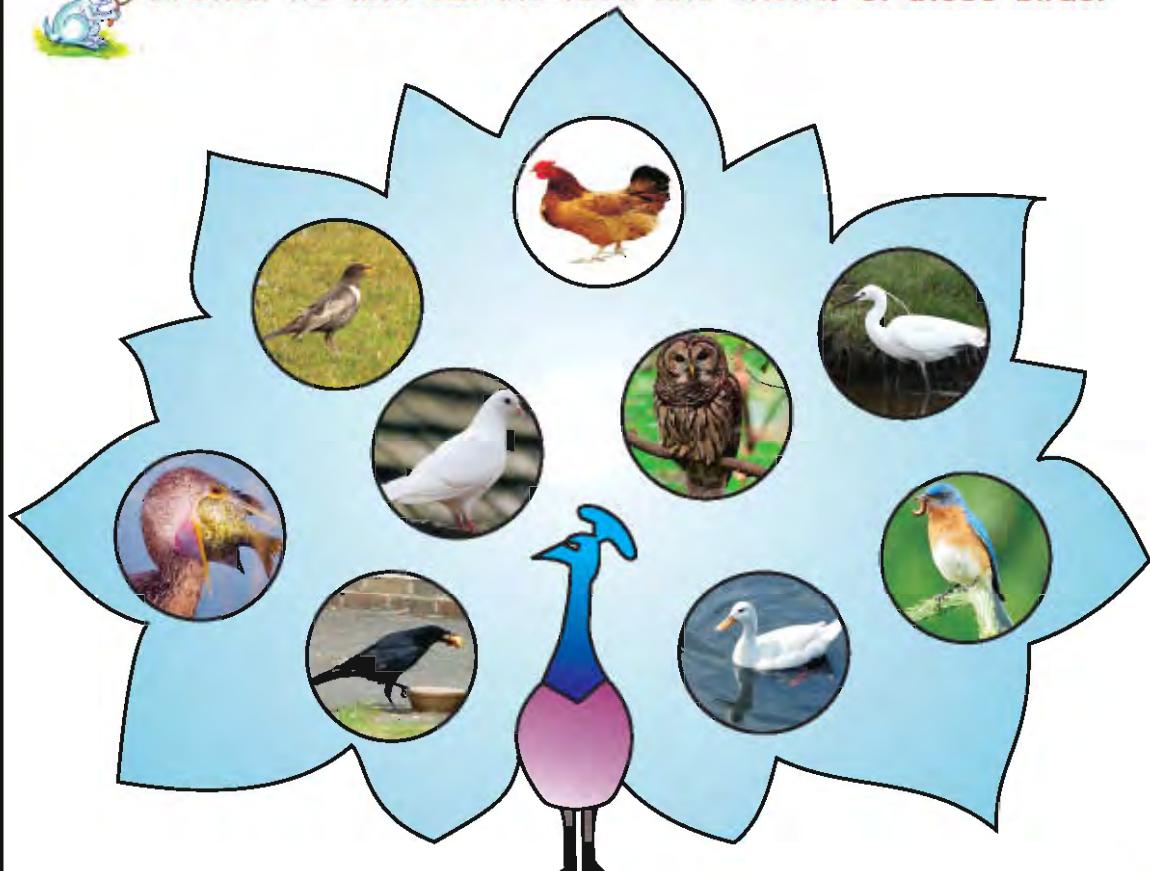


Table:

Bird	Food	Shelter
Hen		
Duck		
Owl		
Kingfisher		
Dove		
Crane		
Crow		
Myna		
Sparrow		



c. Let us find out

Circle the animals hidden in the boxes.

S	N	A	K	E
D	U	C	K	L
C	R	O	W	I
F	R	O	G	O
D	O	V	E	N

1. Animal that swallow the food _____.

2. Carnivorous animal living in forest _____.



3. Bird that travels a long distance _____

4. This can live both in land and water _____

5. This has webbed feet _____

6. Omnivorous bird _____

d. Shall we classify!



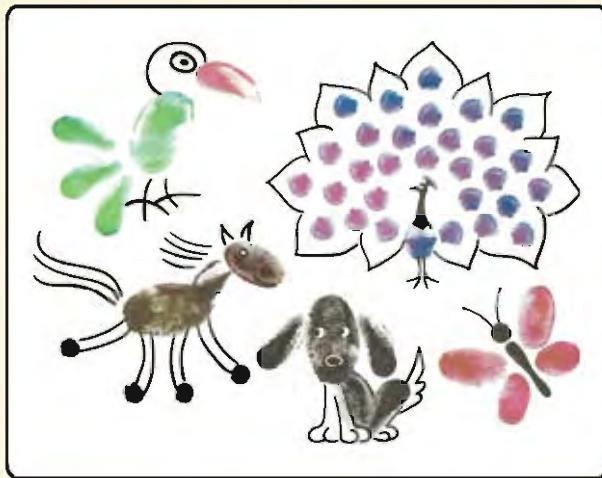
List out the names of the animals you know.

Herbivore	Carnivore	Omnivore

e. Let us do !



1. Apply ink on your finger tip and make impressions of your finger on paper and create animals as you like.



2. Feather pen :

Write your name with the help of hen's feather dipping it in the ink.



3 . Let us prepare :

Prepare an album, by collecting colour pictures of animals and birds from the newspapers and magazines.



f. Project Work :

- ◆ During holidays, scatter some grains in your garden. Observe the beak and the feet of the birds that come to feed on the grains.
- ◆ Use different types of grains and make shapes of birds.

Facts



- Fishes keep their eyes always open because they don't have eye lids
- House lizard never drinks water.



3.

SMALL CREATURES IN THE GARDEN



It was a pleasant morning. Poovizhi liked to enjoy the sunrise in the early mornings. She appreciated nature's beauty. She was attracted by the colourful butterflies. There was a park near Poovizhi's house. It had a lot of colourful flowers blooming every day. Many butterflies and honeybees in large groups visited the flowers to suck the nectar. How beautiful and colourful they were! She always observed their movement carefully.



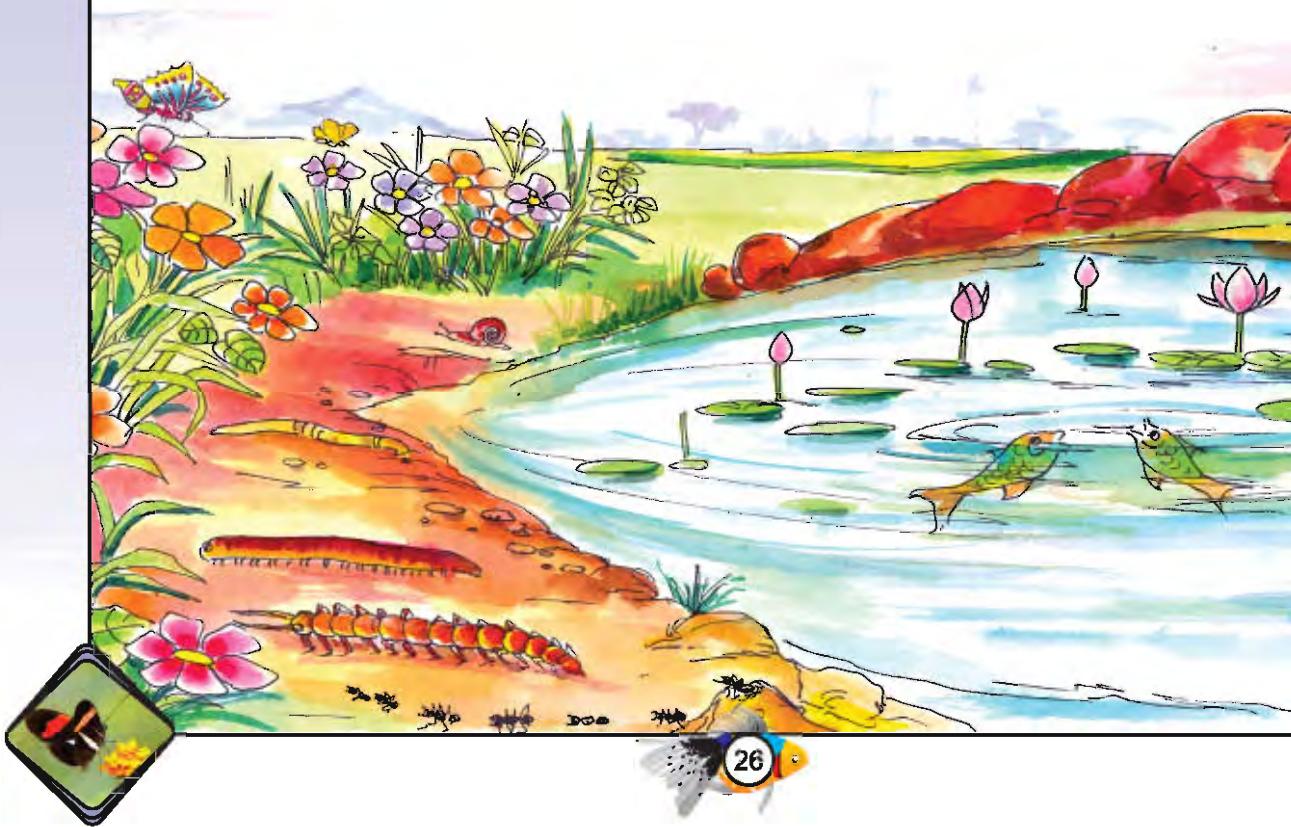
Without making noise she went like a cat near the insects and observed them. How beautiful they were! How many colours! She saw the ants moving in a line from the tree. Some ants fell into the spider web and became the food for the spiders.

She felt pity on the ants. Soon, a centipede came crawling by. As she got up to rush away, she saw a millipede with many legs crawling fast.

Poovizhi felt that the legless earthworm moving up and down in the soil was as beautiful as millipede. When she was about to get back to her house, she saw the snail with its house on its back.

She was lost in her thoughts of wonder. She was brought back to her senses only when a mosquito pinched her and flew away.

This is what Poovizhi saw.





Let us Identify the creatures seen by Poovizhi

1. Insects living in the soil _____.
2. Insects living in the pond _____.
3. Small creatures living in the garden _____.

When **Poovizhi** reached her house, she heared her mother's voice, "**Poovizhi**, it is a holiday. Why don't you help me in cleaning our house"?

"Why should we keep it clean?" She asked innocently.

If the house is not kept clean, flies, mosquitoes and cockroaches will live here and harm us.

You may write the names of the insects that **Poovizhi** has seen in the house and garden.

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.

When **Poovizhi** started cleaning the house, the insects from inside and outside the house came out and made puzzles about themselves. Shall we see, what were the answers given by **Poovizhi**? They were very interesting.



Shall we find!

Find out who I am.

We are flying insects. We have six legs and two pairs of wings. We help the flowers to change into fruits.

Who are we?

Poovizhi : Thats easy! **Butterfly!**



Honey comb is our home. Queen, Worker, Male are our family members. We have six legs and four wings. We take honey from plenty of flowers which has medicinal use.

Who are we?

Poovizhi: Are you not **honey bees!**



I am also an insect. I have 6 legs and a pair of wings. My duty is to increase the harvest by feeding on small insects, which attack the crops. Who am I?

Poovizhi : Dragonfly.... I know about you.

My home is soil. My body is made up of small segments. My excreta is used as biofertilizer. By contracting and relaxing my muscles, I move forward and backward in the soil. I help in the air circulation in the soil. I am known as farmer's friend. Who am I?

Poovizhi : I know.....**earthworm!**



I live in pure water as well as stagnant water. I suck blood through mouth parts and spread diseases like malaria, dengue, chickungunia to man. I am an insect. Who am I?

Poovizhi : Aren't you the **mosquito!** Get out.



I am also an insect. I live in dirt and feed on decayed food. I like sweets and the food left open. Spreading diseases like dysentery, cholera is my hobby. Who am I?

Poovizhi: Yes, I know, you are a **housefly**.



I am an insect. I live in dark places. I am seen in places like kitchen, store room and closed desks. I disturb man by spoiling food. Who am I?

Poovizhi: Are you the **cockroach**?

I fly fast and I am seen in the garden. I cut and feed on leaves. I am an enemy of the farmers as I come in groups and attack the fields.

Poovizhi: Yes. You are the **grasshopper**.



Fact



- ◆ The insect that migrates the longest distance is the butterfly.

Let us think!



How are the ants able to go in line?



After puzzles, the insects started talking to Poovizhi about their food.



I eat rice, sugar, rava and all types of eatables.



Female mosquito feeds on the blood of man and animals. Male mosquito feeds on plant sap.



I eat small insects and spiders.



I feed on small insects that fall in my web.



I feed on the nectar of the flowers which I save in honey comb.



I like to feed on leaves and other parts of the plants.



I feed on the dust in the soil.



I feed on honey from flowers sucking them with my tube.



Let us write !

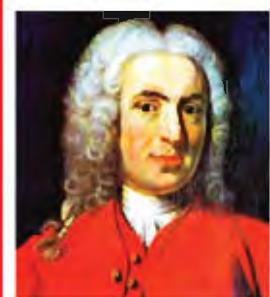


What is my food ?

1. Snail _____
2. Honey bee _____
3. Ant _____
4. Earth worm _____
5. Spider _____
6. Butterfly _____
7. Mosquito _____
8. House lizard _____

After knowing all about the insects, Poovizhi went home happily, and had her breakfast after bathing.

Who is he?



Carolus Linneus

He is the scientist, who introduced the system of naming the plants and the animals which is followed throughout the world.

Fact



About 2 million people around the globe die every year due to insect bite.



Evaluation:

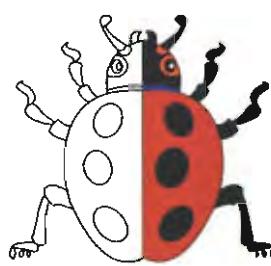
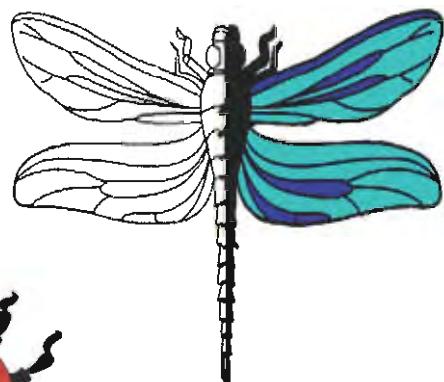
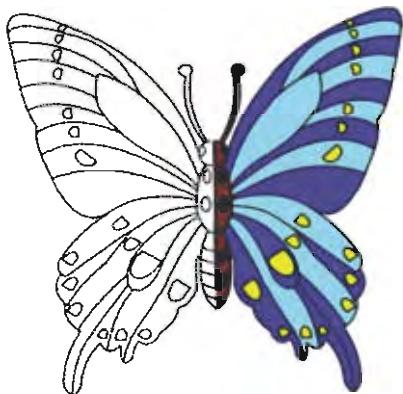


a. Let us find !

Who is the stranger ?

- ◆ Live in the soil : Ant, Earthworm, Grasshopper, Termites
- ◆ Live in trees : Snail, Garden Lizard, Squirrel, Lizard.
- ◆ Live in houses : Garden Lizard, Rat, Lizard, Spider.
- ◆ Live in water : Frog, Snail, Fish, Scorpion.

b. Let us draw and colour !



c. Project :

1. Prepare an album with pictures of small animals that help man.
2. Observe the insects found in and around your house in the morning and in the evening. Record your observations regarding the place of their dwelling.



4. TOWARDS MOON



The school was buzzing with activity. Everyone in the village had come to the school. They were happy and excited. They were all awaiting the arrival of scientist **Dr. Deepa** who is a renowned scientist and an old student of the school. She preferred to interact with the students rather than giving a speech. So arrangements were made for the interaction.

Selvam : Good morning, madam. We are happy to meet you.

Scientist : Good morning. I like talking to children. **You are the budding scientists** who are going to make this country prosperous in future.

Iqbal : What is science?

Scientist : Good question. Why did you ask me this question? You asked me this to know the answer for your doubts. Just like you many of us ask questions about the things happening in our biosphere. Using our knowledge and experience we find an answer. This is called science.



We can explain all things happening around us based on science.

Selvam : You said our earth is a biosphere because life exists only on earth. Didn't you?

Scientist : Yes. You are right. You should also know that the earth is the third planet in the solar system. It is spherical in shape.

Selvi : Why does life exist only on earth?

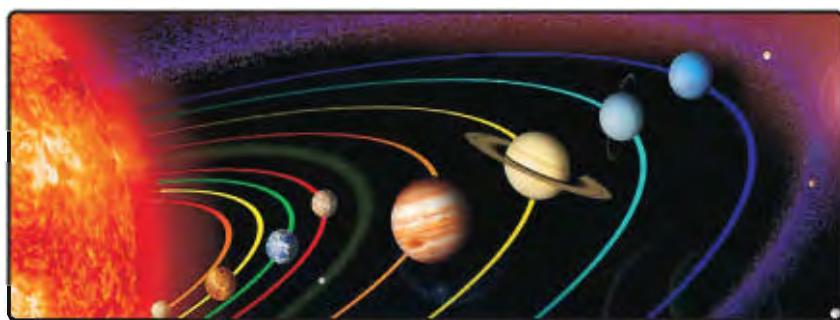
Scientist : Among all the planets in our solar system only earth has air and water. So life is possible only on earth.

Madumitha : How much of water is there on earth?

Scientist : The surface of earth is covered with three parts of water and one part of land. Do you all know about solar system?



Earth

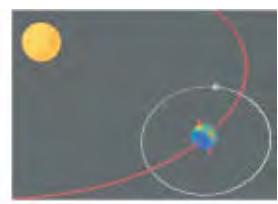


Solar System

Mary : The sun along with 8 planets revolving around it form the solar system.

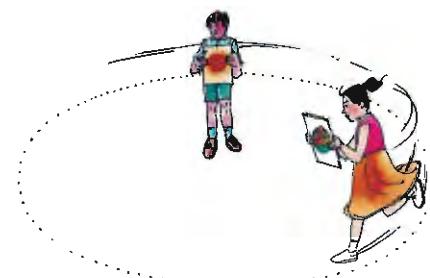
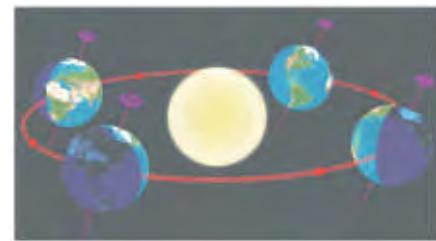


Goutham : Is it true that the earth takes 1 year to go around the sun?



Scientist : Yes, the earth revolves round the sun in an elliptical orbit. It takes $365 \frac{1}{4}$ days to go around the sun. We call this as one year.
Do you know what is one day?

Vaikunth : The earth not only goes around the sun it also spins on its own axis. This is called rotation. It takes 24 hours to complete one spin. We call the time taken by earth to rotate once on its own axis as one day. A day has almost 12 hours of day and 12 hours of night. The sun is seen during day time and moon is seen during night time. Am I right madam?



Scientist : You are right Vaikunth. When earth spins on its own axis the part of the earth facing sun has day time and the other part which is dark has night time. (One among you can stand as sun and the other can revolve around him as earth and do the experiment.)

Chitra : How are days and nights caused?

Scientist : Rotation of the earth on its own axis causes day and night.

Fathima : Madam, Is the moon a planet?



Scientist : No. Moon is a satellite. The earth goes around the sun. The moon goes around the earth.

Meenakshi : Why do we see the moon in different sizes?

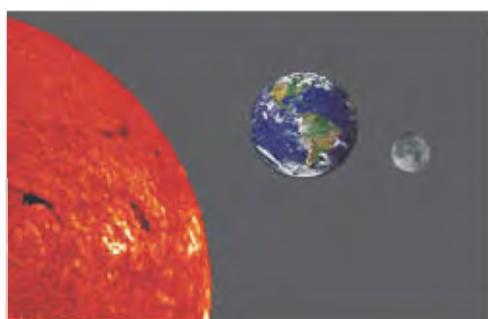
Scientist : Let us do a small experiment, does anyone have a mirror?

Gokulavani : Yes, we have it in our lab.

Scientist : Selvam take it out of the classroom and keep the mirror slightly tilted towards the sun. Now what do you all see?

Goutham : Sunlight gets reflected. We have played like this many times.

Scientist :



The moon has no light of its own. It reflects the light from the sun. It is like a mirror reflecting the sun light. The moon never grows or reduces in size. The moon seems

to grow and wane because of the effect of sunlight falling on it. Moon does not have enough air and water to support life. What is a day without moon called?

Devi : Newmoon day or Amavasya. Am I right?

Scientist : Yes. you are right. What about the night we see the full moon? What is it called?

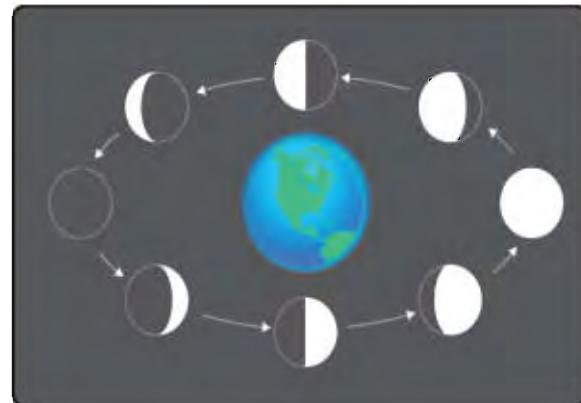
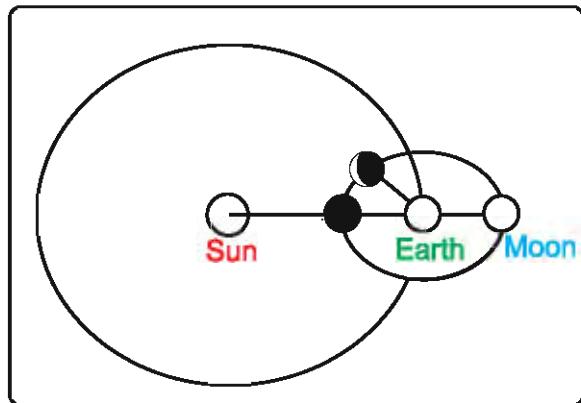
Sumathi : Pournami or full moon day. I have read that Pournami and Amavasya comes once in 15 days alternatively. We call the phases of moon between Amavasya and Pournami as growing moon and the phases of moon between Pournami and Amavasya as waning moon.



Scientist : We always see only one side of the moon. When sunlight falls fully on the side facing us we see full moon.

Kasim : What about the new moon day?

Scientist : When sunlight does not fall on the side of the moon facing us we cannot see the moon. Though it is there it does not reflect the light, so it is out of our sight. This is called as a new moon day. We see different phases of moon because of moon's revolution around the earth and earth's rotation. Moon never ceases to exist. It is always there in the sky.



Sathya : Madam, I love to go to the moon. Will I get a chance?

Scientist : Very good, just like Sathya everyone should dream big. Only then we can make India a great country. Children, You are highly intelligent! You all seem to have a good scientific knowledge. I am very proud of you. Congratulations!.

Selvam : Madam in addition to reading text books we also read science titbits from magazines. Our science teachers clear all our doubts in the subject.



Mary : We read books from library. We also have science club to develop our scientific interests.

Scientist : Good. I am sure this club will help everyone to find answers for science questions. All the best.

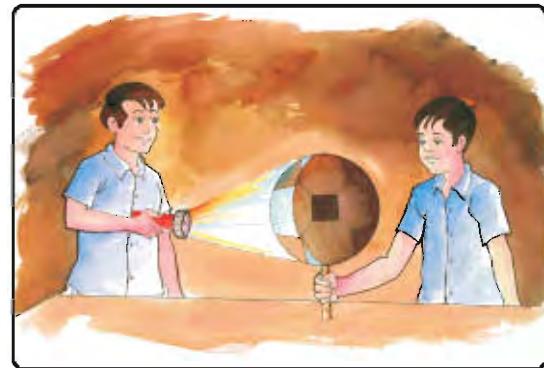
Students : Thank you, madam.



Let us do it, young scientists!

1. **New moon and Full moon** : Take a rubber ball. Insert a thin rod as shown in the picture . Mark A on the side facing us. Allow the light from the torch to fall on the ball. The side marked A will be dark. Consider torch light as sun, ball as moon and yourself as earth. The light does not fall on side of the moon facing us, we do not see moon. It is a new moon or amavasya. Try forming full moon day in a similar way.

2. **Day and night** : Place a globe in the dark room. Allow light from torch to fall on it from the side. One side of the globe is bright and the other side is dark. Rotate the globe slowly. We see that, the parts which were in the dark now get light and bright parts become dark. Days and nights are formed in the same way.



Fact



India sent its first unmanned spacecraft Chandrayan-I to moon on 12.11.2008.

Who is he?



Neil Armstrong

He became the first man to land on the moon.

Evaluation :

a. Let us write :



There is _____ around the earth.

The earth is _____ in shape.

_____ part of the earth is water.

_____ part of the earth is land.

The earth is the only planet which has _____.

It is the _____ planet from the sun.

Fact



The Indian astronomer Bhaskara wrote about the moon **900 years** ago.



b. Let us write :



Earth



Moon

1. Has air and water to support _____.
2. Life exists. _____
3. Revolves around the _____.
1. Not enough air and water to support life. _____.
2. Life _____.
3. Revolves around Earth. _____.



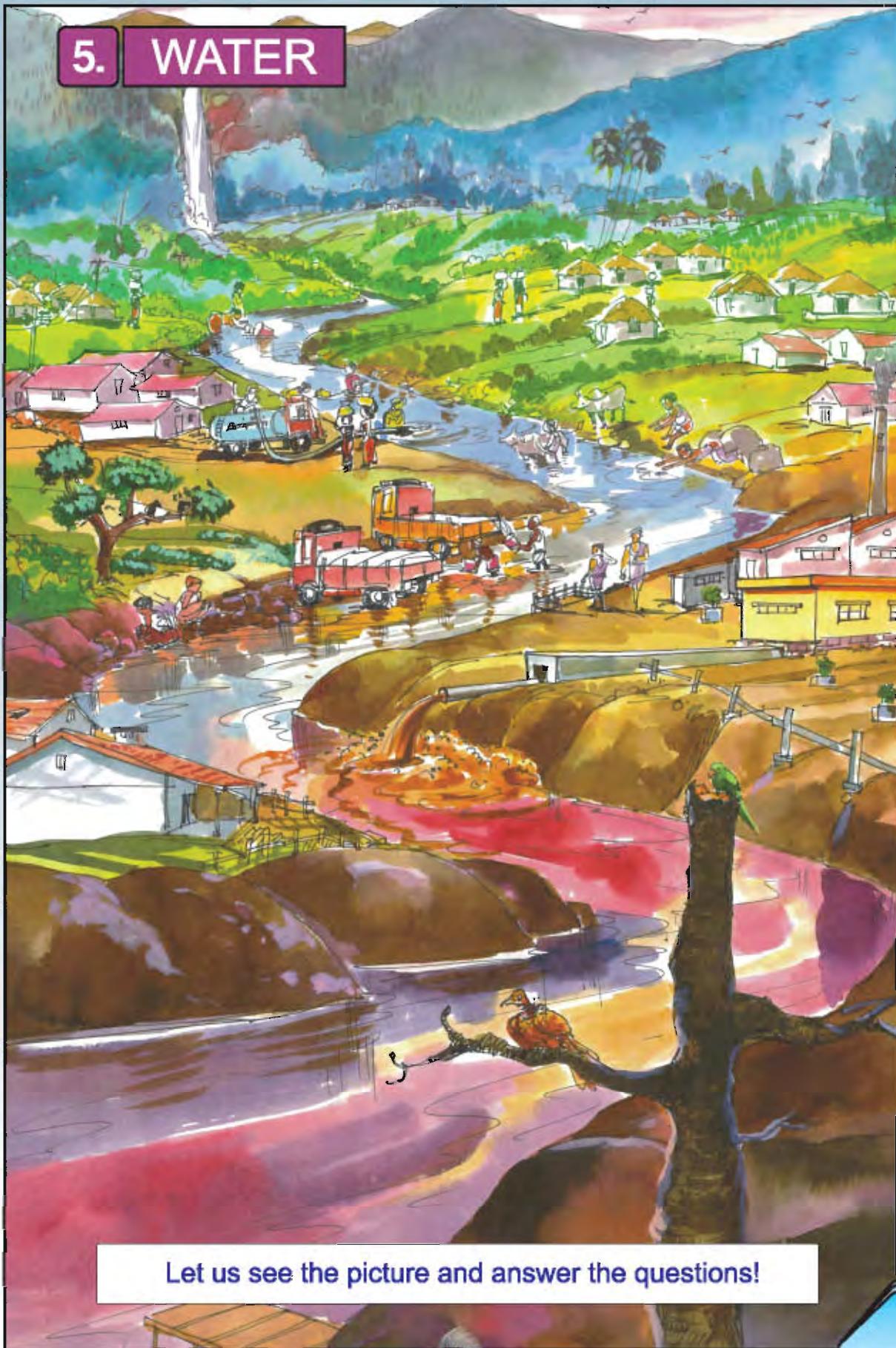
c. Project :



- ◆ Observe the different phases of the moon for atleast 30 days and draw them on a chart.
- ◆ Note the time of moon rise for the same period of time.



5. WATER



Let us see the picture and answer the questions!



1. What are the different uses of water?
2. Where is drinking water taken from?
3. Is river water clean?
4. How does the river water get polluted?
5. Can we wash vehicles in the river water?
6. How do human activities change the purity of the running water?

Drinking water :

From where do you get drinking water in your house?

Does everybody in your street get drinking water from the same source?



Project:



Shall we collect!

Collect the following details from at least 10 houses in your neighbourhood and discuss about it in class.

House	Place from where the drinking water is taken	Is the water filtered and boiled before use.
1.		Yes / No.
2.		Yes / No.
3.		Yes / No.
4.		Yes / No.
5.		Yes / No.
6.		Yes / No.
7.		Yes / No.
8.		Yes / No.
9.		Yes / No.
10.		Yes / No.

Whose job is it to collect drinking water in your house? Why?

Why is sea water not useful for drinking?



Let us know the uses of water.



Let us write...



Write various uses of water from the pictures above :

1. _____
2. _____
3. _____
4. _____

Can you give some other uses of water?



How can we make water safe for drinking ?



Scene 1

Scene 2

Which is right?

Shall we discuss!

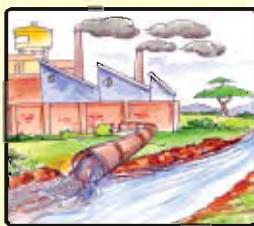


Fact



- 90% of the diseases we get are caused by drinking polluted water.

Water pollution



- Chemicals in soap contaminate water when people wash and bathe in the rivers.
- Human waste pollutes water bodies.
- Dumping garbage in water bodies pollutes them.
- The industries let out their chemical wastes directly into the water source, polluting it.
- Cleaning vehicles and cattle in rivers and lakes pollute water.
- When drinking water is left open dust and other small organisms pollute it.

Water borne diseases...

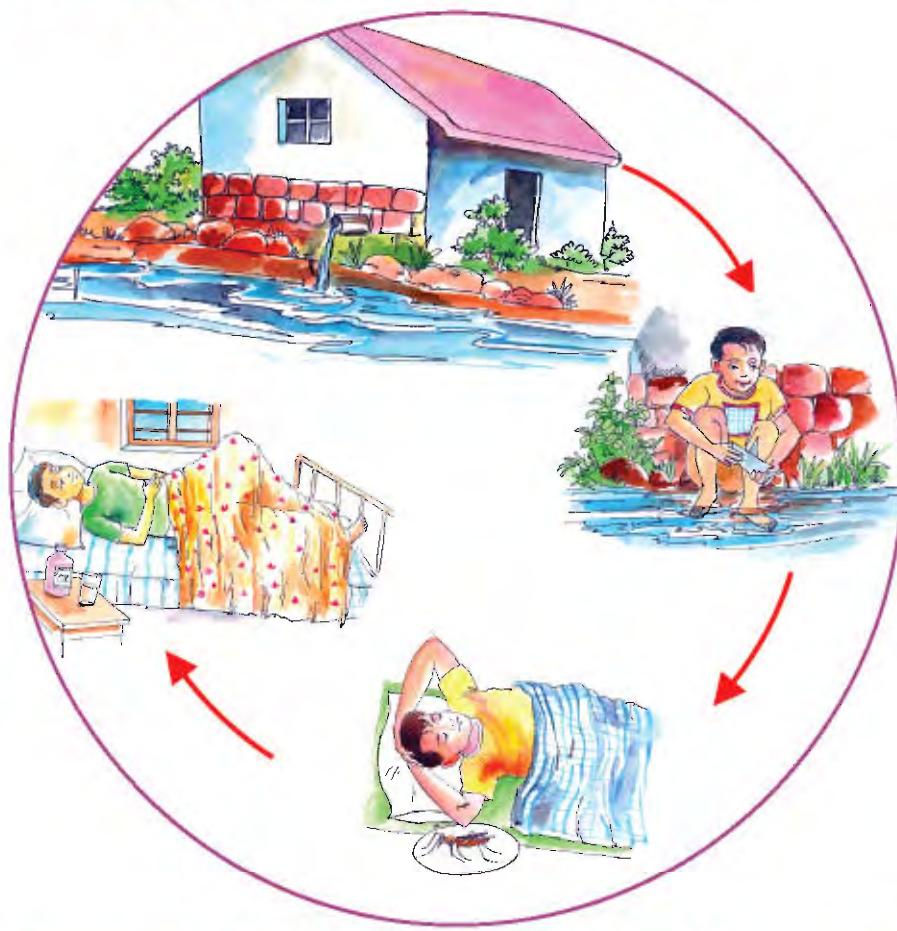
Drinking unfiltered, polluted water causes diseases like cough, dysentery, jaundice, cholera and typhoid.



To prevent water pollution

- ❖ Waste water from houses can be used for gardening.
- ❖ Water from industries must be treated properly before it is let out.
- ❖ Vehicles can be cleaned in service stations.
- ❖ Cattle can be bathed at a distance from water bodies.

Water stagnation and Mosquito breeding...



What do you understand from the above picture?



Let us know about the mosquitoes...

- ◆ There are different types of mosquitoes
- ◆ Some breed in fresh water and some in sewage water.
- ◆ They spread diseases like malaria, dengue, jaundice, elephantiasis, etc.,
- ◆ Breeding of mosquitoes can be controlled by
 - Covering drinking water.
 - Keeping our surroundings clean.
 - Preventing water stagnation in our area.



Let us write..



Where does water stagnate in our school ?

What is the reason for water stagnation?

What can we do to prevent water stagnation?

Save rain water!

Save life!

Water is our life source

Let us not pollute it.



Who is he?



He designed various river valley water dam projects in India.

Sir. Vishweshwaraya

Evaluation :

a. Tick the right one and cross the wrong one.

1. Leaving drinking water container closed.	<input type="checkbox"/>	5. Leaving drinking water container open	<input type="checkbox"/>
2. Waste water stagnation in houses	<input type="checkbox"/>	6. Using the waste water for gardening	<input type="checkbox"/>
3. Dumping garbage in water bodies	<input type="checkbox"/>	7. Using the dust bins.	<input type="checkbox"/>
4. Letting out industrial waste directly into rivers	<input type="checkbox"/>	8. Treating industrial waste.	<input type="checkbox"/>

b. Let us match

1. Drinking water	Malaria
2. Mosquito breeding	Rain
3. Water pollution	Boiled and filtered water
4. Disease caused by the mosquito	Stagnated water
5. Source of water	Washing vehicles

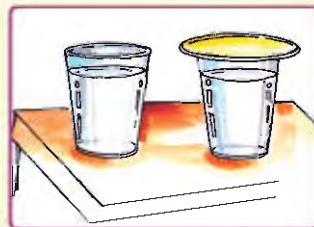


c. Let us do...



- ◆ Take 2 jars
- ◆ Fill one jar with pond water and other with mild soap water.
- ◆ Add some algae into both jars.
- ◆ Leave it in sun for 2 or 3 days.
- ◆ Drop some fishes in both.
- ◆ Observe the jars after a week.
- ◆ Note the results in your note book.
- ◆ Analyse the reasons.
- ◆ Why have the fishes in the soap water died?

d. Let us do...



Procedure :

Pour equal amount of water in both the glass tumblers. Close one glass tumbler with a lid. Let the other one be open. Observe the 2 tumblers after 2 days. Use magnifying glass if required and list the differences.

What do you observe in the glass tumbler without lid?



6.

WIND...BREEZE!



It was evening. A cool breeze was blowing in the beach. Malar was playing on the sands, enjoying the cool breeze. Suddenly, the wind blew strongly. "Let us go home Malar, it may rain" said her mother.

Malar did not want to go home. She asked her father "The wind was blowing gently before, why is it so strong now?". Father started explaining about the different types of winds.

Come on children, let us listen to what he says.

- ◆ Moving air is called wind.
- ◆ The layer of air surrounding the earth is called atmosphere.
- ◆ The atmosphere is a mixture of gases.
- ◆ We cannot see air. We can only feel it. We need air to breathe.



Types of wind!

Breeze :

Cool and gentle wind is called breeze. We can feel it near the water bodies like rivers, ponds, on sea shore and near the hills.



Breeze blows at the speed of 5 to 38 kilometers per hour.

Storm :



Storm blows at the speed of 89 to 102 kilometers per hour.

Winds which blow very strongly are called stormy winds. This is because of low pressure in the sea.

See the pictures and discuss.



Before the storm



After the storm



The damages caused by the storm

Cyclone :

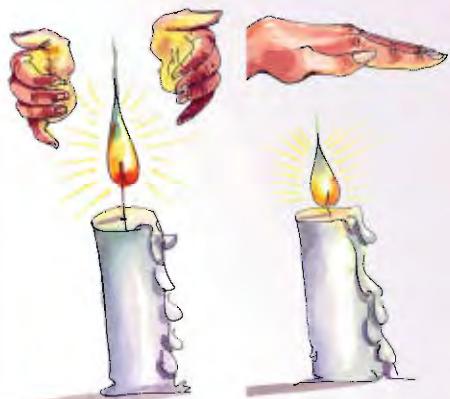
Wind which blows with very high speed is called cyclone. It is stronger than storm. This is also due to low pressure in the sea.



Hot air :

Air that rises up because of heat is called hot air.

Let us do!



- ◆ Light a candle. Keep your hands around the flame.
- ◆ What do you feel?
- ◆ Keep the hands on top of the flame.
- ◆ What do you feel?

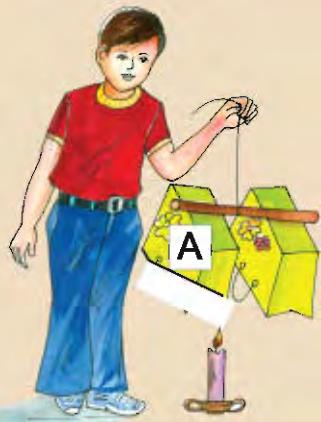
(Do this only in the presence of elders.)



Cool breeze

When hot air rises up, there is an empty space or vacuum in that place. To fill that space, cool air from the surroundings rushes towards it. This is called cool breeze.

Let us do!

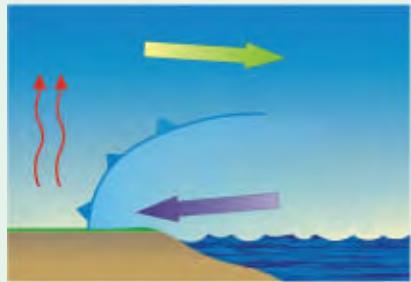


Take 2 paper bags. Fix them upside down to a stick as shown in the picture. Keep a candle under the bag marked A. Why does the bag A rise?

(Do this only in the presence of elders.)

Sea breeze

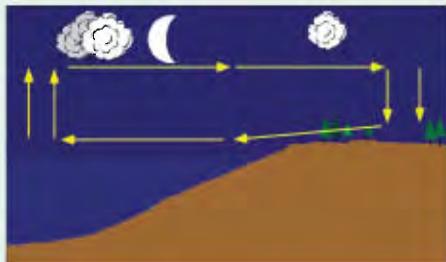
During daytime, land gets heated more than sea water. The hot air in the land rises up. Cool wind from the sea blows towards land. This is called sea breeze.



During day time sea breeze blows towards land.



Land breeze



During night time, the sea will be hotter than the land. Cool breeze from the land will blow towards sea. This is called land breeze.

During night time land breeze blow towards sea.

Facts



- ◆ We get electricity from wind mills.
- ◆ Tamilnadu stands first in generating electricity from windmills.
- ◆ Many windmills are located in Aralvaimozhi and Kaitharu in **Tamilnadu**.



Activity:

Air is nature's gift to man. We need air to live. We have to protect this basic and most important need of man. Today, air is polluted by various activities of man. As a result a lot of natural disasters take place. Can you write all that you know about air pollution?

What steps can you suggest to prevent air pollution?

Do you think there is a connection between wind and electricity? Explain.



Think!



- ◆ If you can talk with the wind, what will you talk?
- ◆ What brings rain?
- ◆ What is the connection between wind and fire?

Facts



- ◆ Winds which blow in a particular direction during a particular season are called monsoon winds.
- ◆ Tamilnadu gets rain from both north east monsoon and south west monsoon winds.
- ◆ We get 48% of rain from north east monsoon.

Who are they?



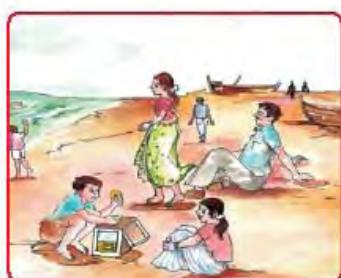
Wright Brothers

First people to fly in an aeroplane



Evaluation :

a. Match



Breeze, Cyclon, Land breeze, Electricity, Storm

b. Let us write:



1. Uses of winds.
2. Causes of storm.
3. Damages caused by the cyclones.
4. What do you know about windmills?
5. Why does cool breeze blow during evenings on the beach?



c. Let us do it young scientist



Things required

1. Cycle pump
2. Hand fan
3. Table fan
4. Small pieces of paper
5. Paper
6. Chart paper pieces
7. Few small pieces of wood
8. Dried leaves
9. Balloon without air
10. Pencil and pen
11. Hay or straw
12. Chalk
13. Scrapings of pencil



Method :

Spread all the above mentioned things on a table. Blow air on them using your mouth. Make a list of things that flew away, in the tabular column. Use a hand fan and blow air on the items kept on table. Write the things which flew away in the tabular column. Use the table fan and blow air. Observe what happens. Finally use the cycle pump to blow air. Write a list of things that flew away in the tabular column.



List the things that flew away.

Air blown by mouth	Hand fan	Table fan	Cycle pump

a. What do you understand from the above activity?

1. _____.
2. _____.
3. _____.
4. _____.

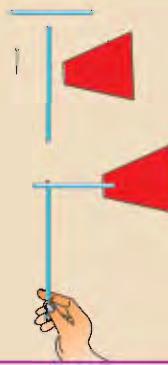
b. The fastest wind was from _____.

(1) Mouth. (2) Table fan. (3) Cycle pump. (4) Hand fan.

d. Let us do!

Things required

1. Chart paper
2. Pins
3. Straw – 2 (one long and one short)



Procedure :

Cut the chart paper as shown in the picture. Make a small vertical cut with scissors on one side of the smaller straw. Insert the chart paper in the gap. Join the other end of the straw with the longer straw in your hand hold the straw loosely in your hand. The direction indicated by the chart paper is the direction of wind.



7. **HEALTHY FOOD**



Teacher : Yesterday we went to a beautiful Park.
How did you feel?

Students : Madam, yesterday's trip was enjoyable and very useful.

Teacher : Mugila, why do you look so tired? Did you have your food?

Vaikunth : Madam, Mugilan eats only fast food items like chips, murukku, pizza, noodles, etc.,

Teacher : Why Mugilan? Don't you like fruits and vegetables?

Mugilan : Fruits! Vegetables! I don't like them at all.

Teacher : Children! Are you all like Mugilan? OK. Tell me what you ate this morning?



S. No.	Name	Breakfast	Ingredients
1.	Deepak	Idly, Sambar	Rice, Black gram
2.			
3.			
4.			
5.			

Let us write:



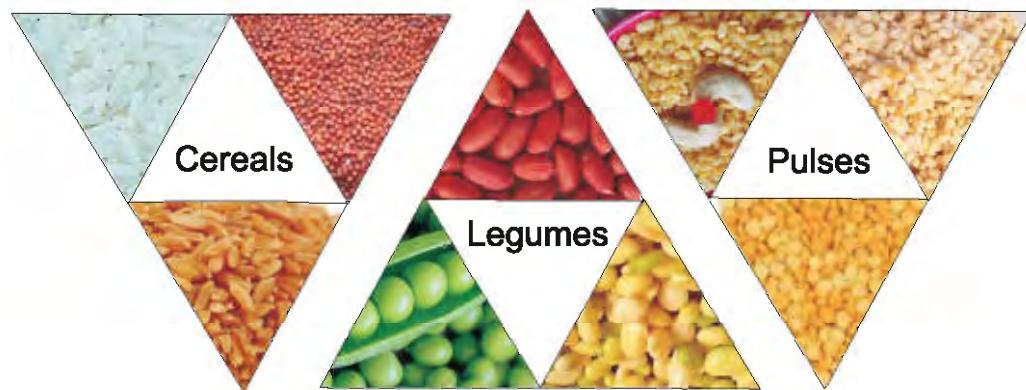
Most of us eat _____.

Ingredients of the food _____.

The food you like to eat _____.

Items you can eat without cooking _____.

Food we must take in our daily life





Curd

Milk

Butter



Meat

Fried fish

Egg



Groundnut Oil



Sunflower Oil



Cooking Oil

We get these food from plants and animals. They give us energy, help us to grow and protect us from various diseases.

Tabulate the food items you eat
in the column given below

S. No.	Food from plant	Food from animal
1.	Rice, Wheat	Egg
2.		
3.		
4.		
5.		



The tasty food we eat takes care of our hunger. Healthy food has...

- Energy producers like carbohydrates, fats
- Body builders like proteins
- Body regulators like minerals, vitamins and water



Carbohydrates give energy instantly



Proteins help us to grow.



Fats give energy and strength



Curd



Butter



Ghee



Oil

Vitamins and minerals protect us from diseases



Carbohydrates, proteins, fats, vitamins and mineral salts are the nutrients present in our food. Water also plays a vital role . Are we eating healthy food? Will it improve our health?

Shall we collect!



Tabulate the food you are going to take for a week from today.

Name of Student: _____

Days	Breakfast	Lunch	Dinner
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
Sunday			



Shall we classify !



Tick the nutrients present in the food you took.

Food item	Carbo hydrates	Proteins	Fats	Vitamins	Minerals

Let us discuss !



- Discuss about various nutrients present in your food based on the tabulation done above.

Facts



- Don't over cook the vegetables. They lose the nutrients
- Vitamins and minerals are lost when we fry our food.



Balanced diet

Based on the age and work the food taken should contain correct proportion of amount of nutrients. This is called balanced diet.

Which is the balanced diet?

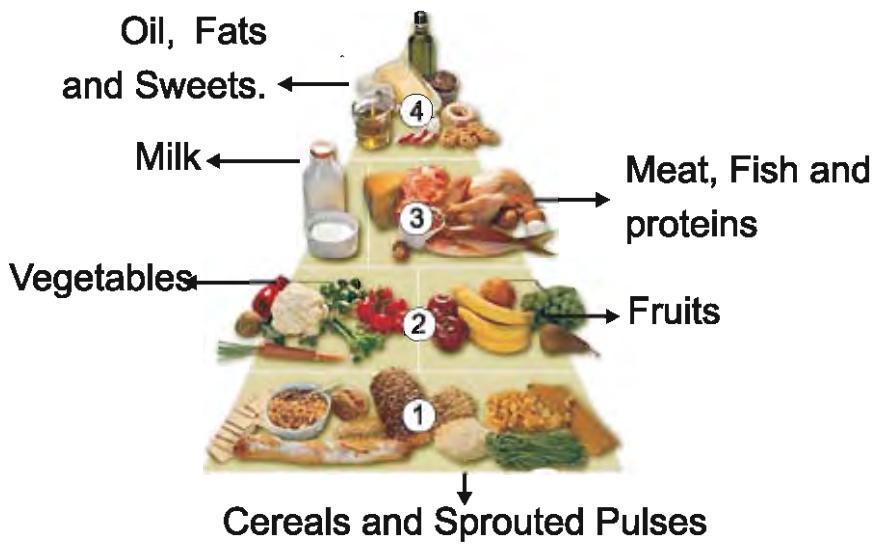


Facts



- Rice loses its nutrients when we polish it.
- Milk consists of carbohydrates, proteins, fats, vitamins and minerals

The Pyramid of the balanced diet



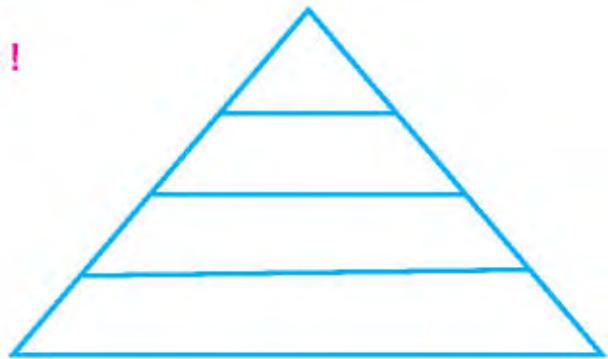
Look at the Pyramid of the balanced diet. In the lowest part of the pyramid lies the carbohydrates. We must eat more of carbohydrates than the 2nd, 3rd and 4th stage food items as shown in the picture.





Let us discuss !

Classify the food items you had based on the nutrients in the pyramid.



Let us think!



Is the food you had yesterday, a balanced diet?

Food items to be avoided :

Burger, pizza, chocolate, tin and canned foods, soft drinks are not good for our health.

Food items to be included

Milk, curd, carbohydrates, pulses, fruits, vegetables, greens, egg and fish. These strengthen our body.

To protect our Health...

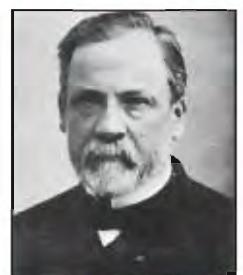
- An adult should drink 2.5 litres of water daily.
- Wash fruits and vegetables thoroughly before eating them raw.
- The seasonal fruits like gooseberry, carrot, guava and papaya protect our health.
- The skin of fruits and vegetables are rich in nutrients.



Different places Different diet

	Tamilnadu We like rice, vegetables, greens, payasam, etc.,
	Kerala We like appam, puttu, coconut, nendrampalam, fish, bengal gram.
	Tribes We like honey, fruits, tubers.
	North Indians We like chappati, pulav, briyani, sabji, etc.,
	China We like noodles, soup, sea food, etc.,

Who is he ?



Louis Pasteur

The method of preserving milk called pasteurization was discovered by him.



Evaluation:

a. Let us match

1.



Butter Ghee

Proteins

2.



Carbohydrates

3.



Fats

b. Let us connect using lines:

1.	Carbohydrates	obesity
2.	Proteins	immunity
3.	Fats	growth
4.	Vitamins	energy

c. List out the names of the greens found in your area.





d. Let us write:



1. Sugar is a _____ (protein / carbohydrate)
2. Can be eaten raw _____ (potato / cucumber)
3. Rich in protein _____ (pulses / vegetables)
4. Rich in vitamins _____ (greens / curd)
5. Instant strength _____ (carbohydrate / fat)



e. Let us find!

1. I am orange in colour you can eat me without cooking.
2. I am pale in colour you can cook me to eat.
3. I am green in colour you can eat me without cooking.
4. I am red in colour I add taste to food.

(Tomato, carrot, potato, lady's finger, beans)

f. Let us think!



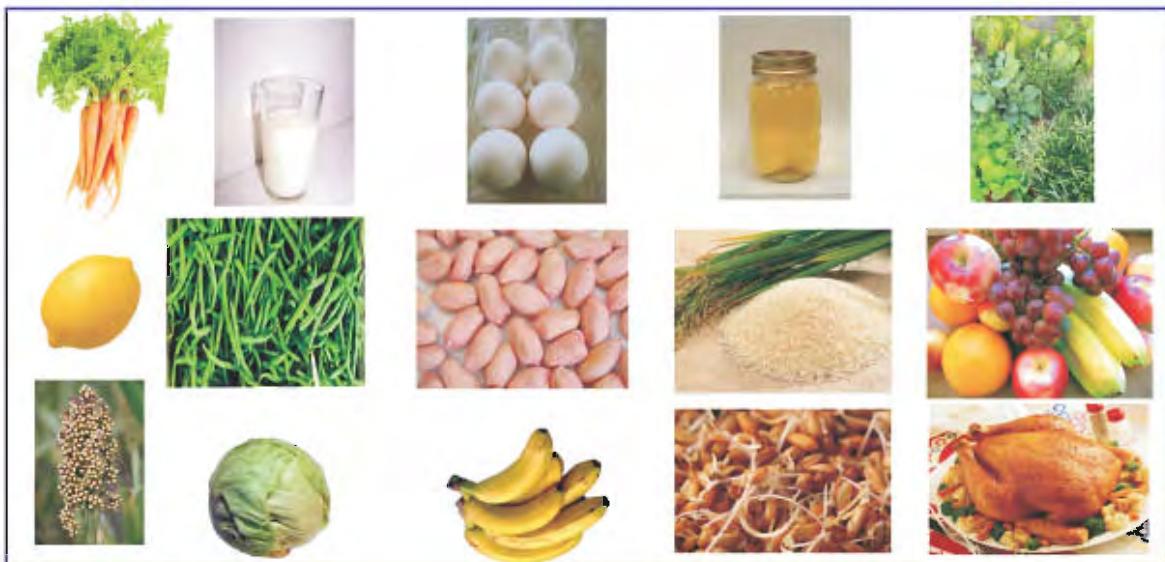
- What can be done to get the nutrients fully from the legumes and pulses?





Shall we classify!

Classify the nutrients I have:



Carbohydrates	Proteins	Fats	Minerals	Vitamins

h. Let us mix and taste

We can eat raw



Carrot, tomato, cucumber, beetroot, sprouted pulses, lemon, curry leaves, salt, pepper.



Ask each student to bring one vegetable, wash them, cut them into pieces. (with the help of adult) Mix them with salt and pepper in a bowl. Let us eat. How is it?



8. WITHIN US



- What are the pictures of the human organs found on the wall of the doctor's room?
- Are they found in our body?
- What are the instruments, doctors use to examine and treat you?
- What do you see on the x-ray screen in doctor's room?
- What are the uses of bones?



The Skeletal system :

- ◆ There are about 206 bones in our body.
- ◆ We cannot walk or run without bones.
- ◆ Skeletal system gives structure to our body.
- ◆ It protects important organs like heart, lungs, etc,



Facts



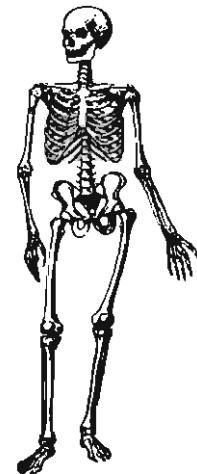
The longest bone in our body is the thighbone.

The smallest bone called stapes is present inside the ear.

The Skull



The brain is protected inside the brain box called the skull.



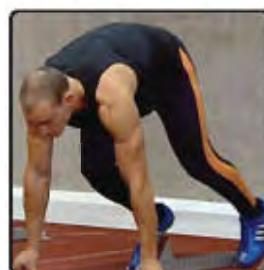
The Joints

The bones are connected with other bones at places called joints.

The Immovable joint

The skull is made up of 8 flat bones. The joints present in the skull, do not move. So they are called immovable joints.

The Movable joints



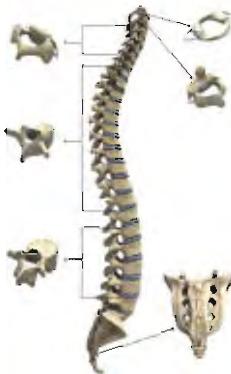
Movable joints are of 4 types.

They are the ball and socket joint, hinge joint, pivot joint and the gliding joint.



To rotate our hands, we have ball and socket joints. We can bend our arms with the help of hinge joints.

The skull is joined with the back bone with a special joint called pivot joint.



Can you rotate your wrist?

The bones present in these area move slightly.

The joints seen in wrist, ankle, back bone are called gliding joints.

Facts



- ◆ Our back bone is made up of 32 small bones.
- ◆ It helps to bend and stretch our body.
- ◆ We get Vitamin – D from sunlight. Playing in sunlight in the evening is good for the bones.

Muscles

The muscles give good shape to our body. The muscles work along with bones for the movement of the body.

Let us do!



- ◆ Fold your arms.
- ◆ Turn your head and look at your friend.
- ◆ Walk inside the classroom.
- ◆ Are your bones cooperating with you?



Voluntary muscles



The muscles which work according to our will are called **voluntary muscles**.

Involuntary muscles

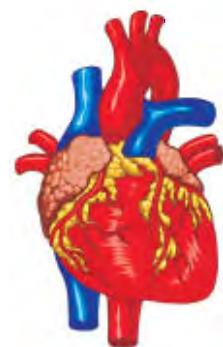
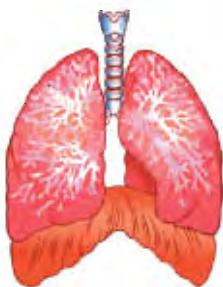
The muscles which do not work according to our will are called involuntary muscles. They work themselves.



During respiration, the lungs contract and expand. Similarly, our stomach contracts and relaxes during the digestion of food. These actions are not under our control. Hence they named as voluntary muscles.

Heart muscles

Heart muscles are special involuntary muscles. Due to contraction and relaxation of heart muscles, heart beat occurs.



Fact



An adult human heart beats 72 times per minute.



Bones and muscles work together to do many activities in day to day life.



Let us find!

Write down the part of the body involved in doing the above activities.

_____ , _____ , _____ .

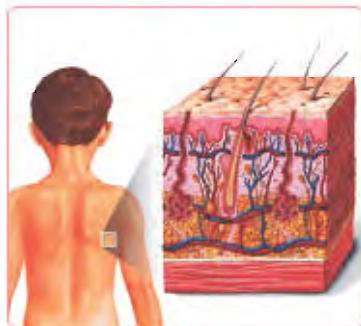
Let us do!



Take a paper bag. Put the following things in it. Shiny paper, cardboard, pencil, sand paper, stone, flower and eraser. Ask your friends to close their eyes and list out the things inside the bag by touch.

Which organ covers and protects the bones and the tissues?

The Skin

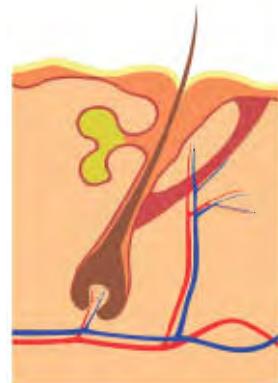


- ◆ The skin covers the entire body.
- ◆ The skin protects the internal organs.
- ◆ Skin helps in maintaining the body temperature.
- ◆ Skin is a sensory organ. It helps us to feel temperature, cold, pressure, pain, etc.,



The Hair

Hairs are present almost on all parts of the body. They help in protecting the body. There are about one lakh hairs in the head of a normal man. These give us beauty and also protect our skin from micro organisms.



The Teeth



Shall we collect!



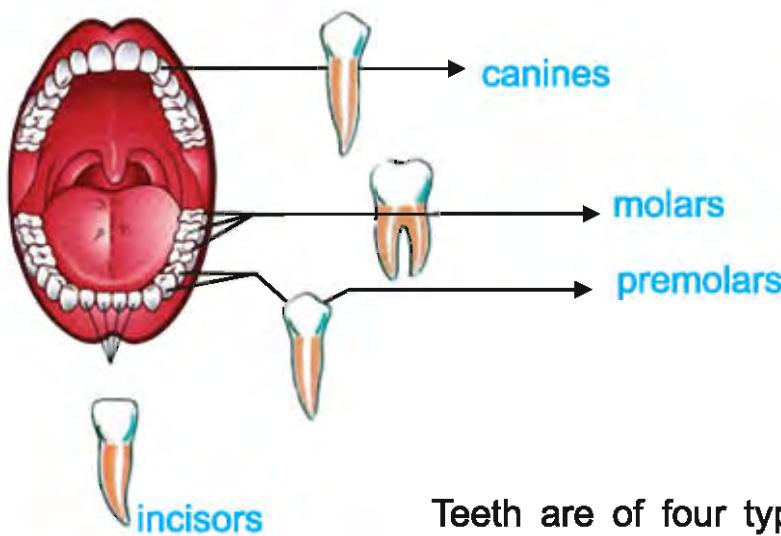
- ◆ How old are you? _____.
- ◆ Count your teeth and make a note _____.
- ◆ Have your teeth been shed? How many?
_____.
- ◆ How many teeth have grown back? _____.
- ◆ Have your milk teeth been shed? Have they grown back?
_____.



Food is needed for the functioning of our organs. Teeth are needed for the grinding of the food.

Milk teeth are present in childhood. They are temporary. The permanent teeth grow after 6 years. Enamel is the hardest material seen on the surface of the teeth. Teeth are made up of a chemical named calcium.





Teeth are of four types. They are premolars, molars, canines and incisors.

Facts



Cool drinks and sweets taken in excess become dangerous.
The chemical present in them causes cavity in teeth.

- ◆ Let us keep our bones, muscles and teeth healthy.
- ◆ Let us take nutritious food and do proper exercises to be healthy.
- ◆ It is good to brush your teeth in the morning and night.

Who is he?



Roentgen

Roentgen discovered X-rays which help to identify fracture in bones.



Evaluation



a. Find out who I am ?

(Gliding joint, teeth, bone, heart muscles, pivot joint)

1. I am made up of calcium.
2. I am an involuntary muscle present in rib cage.
3. I am a joint, I help to turn your head.
4. I am a joint. I am present in your wrist
5. I help to chew your food.

b. Circle the Joints





c. Let us collect!

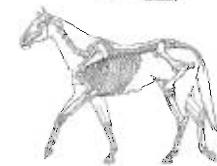
- I) Observe the teeth of your friend. Is it looking different? Draw a picture of incisors and molars in a note book. Later compare them.
- ii) 1. How will you protect your teeth?
2. What will you do to protect your skin?
3. If your backbone is a single long bone, what will happen?
Think about it.

d. Let us match.

Crocodile



Frog



Rabbit



Fish



Horse



e. Project :

Find out the joints mostly used by dancers and sportsman during their activities. Prepare an album with it.



9.

HEALTHY FOOD HABITS



There was a tug-of-war in our school today. Third standard students were so excited. The Physical Education Teacher separated them into two groups. Xavier led one team and Barath led the other team. The Teacher blew the whistle. Both teams pulled the rope with their full strength. Xavier's team won the event. The teacher congratulated the winning team. Xavier said, that his team won the event due to regular practice.

Thanking the teacher Xavier said, "We won the match not only because of regular practice but also due to our healthy habits. We drink milk everyday. We eat egg, fish, meat, green peas along with our daily food".





"What is your daily food?", asked the teacher. **"Our daily food includes rice, wheat, greens and potatoes. They give us energy to play, work and stay active throughout the day.**

We eat very little chocolates, ice-creams and sweets. We do not eat food sold open on the streets.





We never say no
to fruits,
vegetables and
sprouted seeds.
They help us to
prevent
diseases.



Let us find!



Which is right? Why?



- ◆ We do exercise daily in the morning and evening.
- ◆ We play outdoor games for atleast 1 hour a day.
- ◆ We practice yoga and meditation daily.



Shall we classify !



S. No.	Team Games	Individual Games
1.		
2.		
3.		
4.		
5.		



We watch Television only after completing our studies. We see TV for half an hour. We finish our dinner by 8 p.m.



We go to bed by 9 p.m. Our body needs rest. After having a wholesome food and active playtime, we sleep peacefully. Next day we get up early in the morning for exercise and studies".

After listening to Xavier, Barath's team said, "We watch TV for long hours, we eat fried foods very often. We take a lot of chocolates and ice creams. We don't drink milk much. We drink aerated cool drinks. All this reduced our strength. We will change all these habits, we will follow healthy habits and win the event next time".

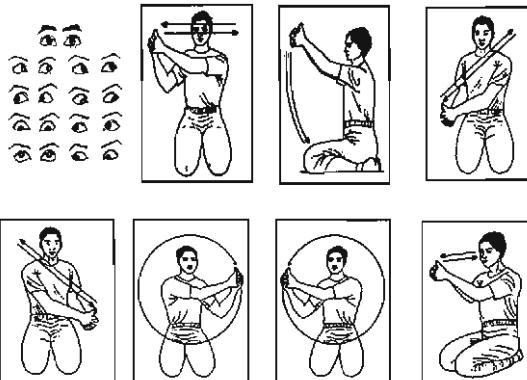
Let us do!



Eye exercise

(with parent or teacher guidance)

- ◆ Join both the hands, keep the thumb nails touching each other as shown in the picture.
- ◆ Bring them slightly below your eye level. The eye should move along with the finger.

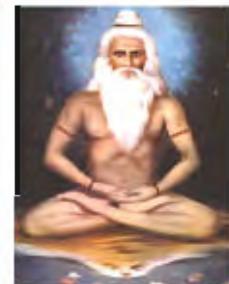


- ◆ Take hands to your sides as shown in the picture.
- ◆ Eye should always be fixed on the thumb nails.
- ◆ During the exercise head can move slightly .

Eye protection

- ◆ Wash your eyes with clean water daily in the morning.
- ◆ Do not see the sun directly with the naked eye.
- ◆ Do not read in dim light.
- ◆ Do not lie down while reading.
- ◆ Do not read while travelling in bus or train.
- ◆ When dust falls in the eye, do not rub your eyes with hands. Wash them with clean water.
- ◆ Eating lot of oranges, yellow coloured fruits, vegetables and greens are good for your eyes.
- ◆ Sit atleast 2.5 meters away from TV while watching it.

Who is he?



Patanjali Munivar

The Father of Yoga

Donate blood until death!

Donate eyes after death!



Evaluation:



a. Let us find!

Which is correct ? Which is wrong ?



b. Let us discuss!



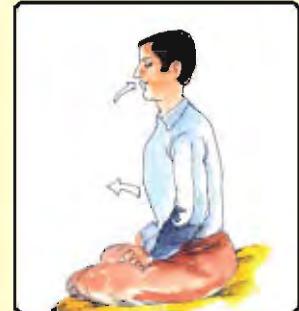
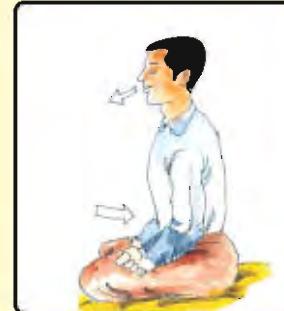
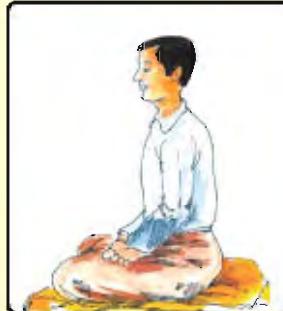
Mark the answer and discuss with your teacher.

1. I am always active.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2. I cover my face and sleep	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3. I get tired after playing.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4. I am always healthy.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5. I go to bed late in the night.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
6. I get up early in the morning.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
7. I always keep eating.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
8. I play in the evening.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9. I eat a fruit daily.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10. I do not eat vegetables.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

c. Let us do



Breathing exercise



What do you feel when you breathe in and breathe out?



d. Let us find!



Tick the right one and cross the wrong one.

1. We should wash our hands before eating.
2. We should eat our food very fast.
3. We should eat only at proper times.
4. We should eat lots of ice-creams and toffees.
5. We should use clean vessels for cooking.
6. We should eat food sold on the streets.
7. We should always keep the food closed.
8. We should drink boiled and filtered water.
9. We should not eat fruits.
10. We should eat greens along with our food everyday.



10. LET US DO



Teacher : Children, do you all know what we celebrate on November 14?

Velankanni : Yes. November 14 is Childrens' day.

Teacher : You are right. What day is it today?

Students : February 28.

Teacher : Good. Today is the National Science Day. Let us do some small experiments to celebrate it.

Students : Yes, madam.



All things around us are matter. Matter exists in solid, liquid and gaseous states.

Teacher : Keep the things you have on the table.

Teacher and the students kept many things on the table.



Air filled balloon



Air filled foot ball



Empty foot ball



Vendors balance



Note books



Water bottles



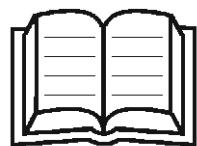
Plates



Pencils



Eraser



Book



Empty balloons



Water tumblers



Teacher : Shall we start doing our experiments right away?

Students : Yes, madam.

Teacher : Now take your books and pencils. They all have a proper shape. They do not change their shape. We call these things as solids. Hold the notebook in one hand and pencil in the other. How do you feel?



Students : Pencil is light, whereas book is heavy.

Teacher : What else do you observe?

Students : They have different shapes.

Teacher : Do they flow like water?

Students : No, they do not flow.

Teacher : These are the properties of solids. List them out.

- Solids do not **flow**.
- Solids have **weight**.
- Solids have definite **shape**.
- Solids **occupy** space.



Teacher : Let us take a bottle of water. Pour water out. (A student pours a little amount of water on the floor). What do you see?



Students : Water flows on the floor.

Teacher : Water is a liquid. It can flow from one place to another. Let us pour the same amount of water on to a plate and into a tumbler. We see that water takes the different shapes of the containers.



Teacher : I am going to place an empty water bottle on one pan and a water filled bottle on the other pan of the balance. What happens?

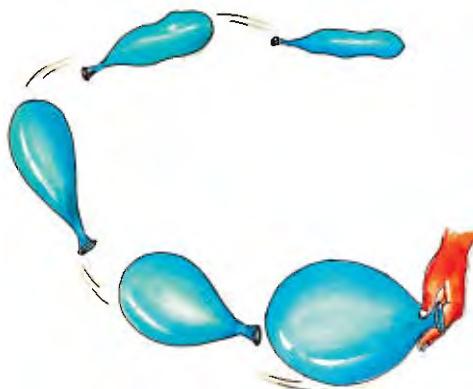


Students : The pan with filled water bottle comes down and the one with the empty bottle goes up. This shows that water has weight.



- Liquids flow.
- Liquids have weight.
- Liquids have no definite shape.
- Liquids take the shape of the containers.

Teacher : Let us blow a balloon and release it from our hand. See what happens?



Students : Balloon falls down as air comes out.

Teacher : Could you see the air? Can you hold air as you can hold the solids and liquids?

Students : No.

Teacher : Let us keep an airfilled football in one pan and an empty football in the other pan in the balance. What happens?



Students : The pan with the air filled football comes down and the one with the empty football goes up. So we come to know that air has weight.



- ★ Gases can flow.
- ★ Gases have weight.
- ★ Gases have no definite shape.
- ★ Gases occupy space.

Teacher : We celebrated The National Science Day by doing small experiments to study the properties of matter. Thank you for your participation.

Who is he?



Sir. C.V. Raman

The Indian who received Nobel Prize in Physics for the discovery of Raman effect.

Evaluation :

a. Compare : Use or according to the properties

Matter	Shape	Weight	Flows	Occupies Space
Solid				
Liquid				
Gas				





b. Shall we classify !

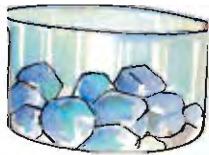
- A. Write the names of things you use in your daily life.
- B. Write the state of matter of those things.
- C. List the solid and liquid substances in the food you eat.



c. Let us find!

1. Liquids used for cooking.
2. Solids used for cooking.
3. Liquids used for washing your hair.
4. What is filled in your cycle tube?

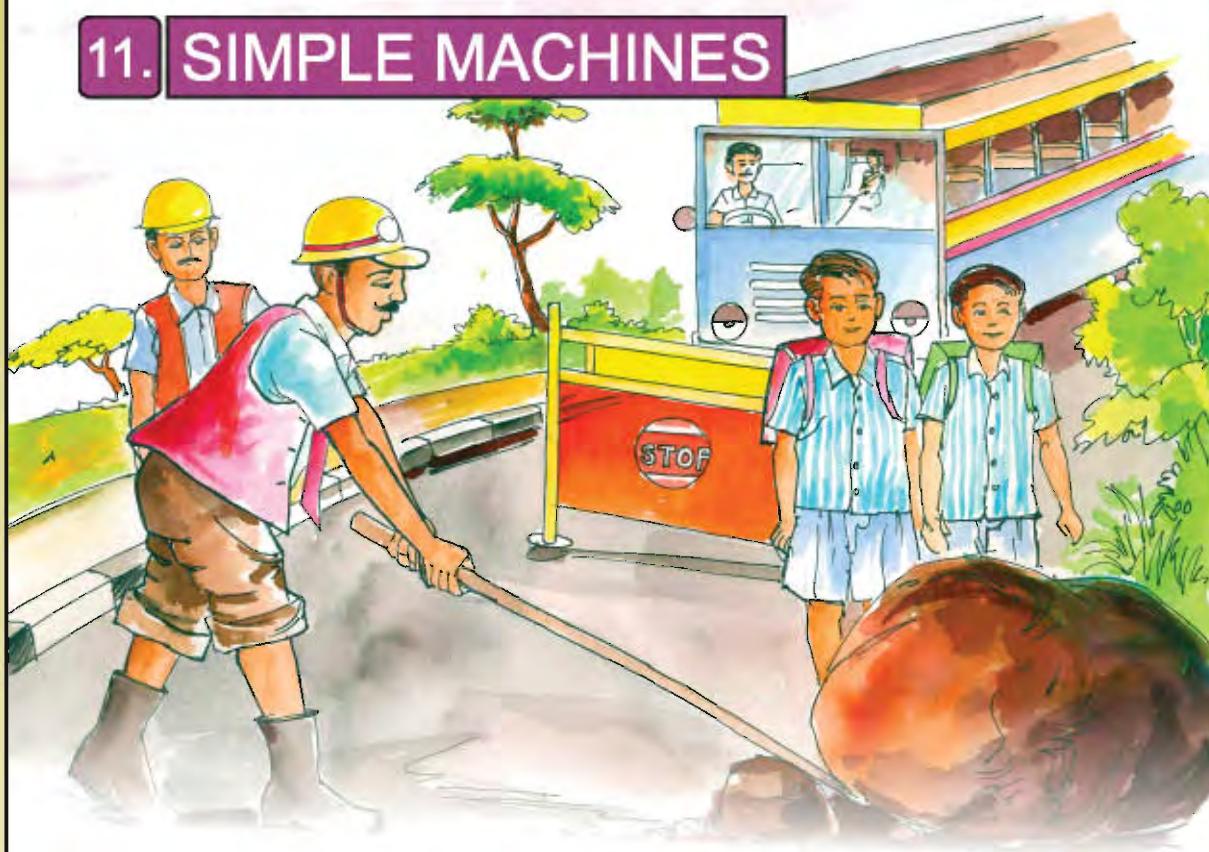
e. Let us do



See the picture and write the result.



11. SIMPLE MACHINES



The children were returning home from their school. They saw workers trying to remove a huge rock lying on the road. They were using a crowbar to do the work. Children wondered how it would be possible to move such a huge rock with a small iron rod. One end of the crowbar was inserted under the rock. A small stone was kept under the crowbar. When the other end of the crowbar was pressed down, the rock moved! The children were so thrilled.

- ◆ A push or pull which stops or moves an object is called force.
- ◆ An object which helps us to do work easily is called a machine.
e.g. lever.
- ◆ Lever helps to transfer the force applied at one end to the other end. It also changes the direction of force.



- The point where crowbar touches the small stone is called the **fulcrum**.
- The object which is moved is called the **load**.
- The force given at one end is called the **effort**.

Based on the position of **fulcrum**, levers can be classified into three types.

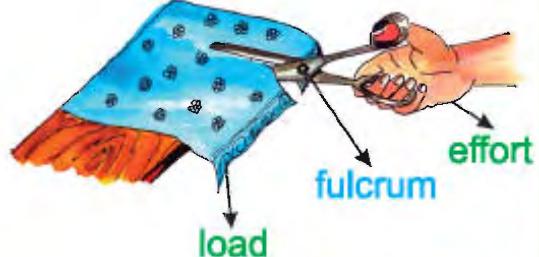
First order lever

(eg. Scissors)

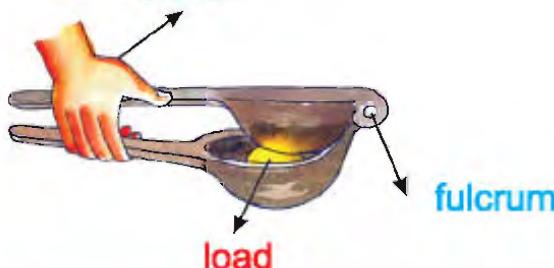
Force applied at handle - **Effort**

Cloth which is cut - **Load**

Central point - **Fulcrum**



effort



Second order lever

(eg. Lemon squeezer)

Handle – **Effort**

Lemon (Centre) - **Load**

Opposite end - **Fulcrum**

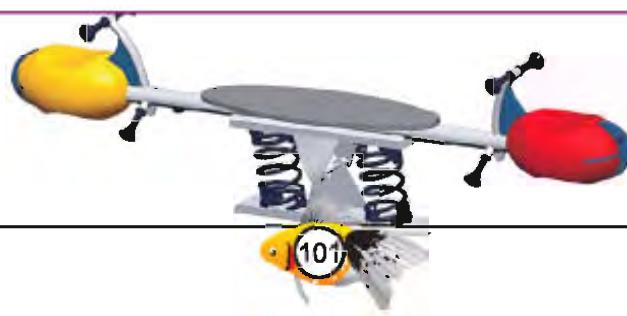
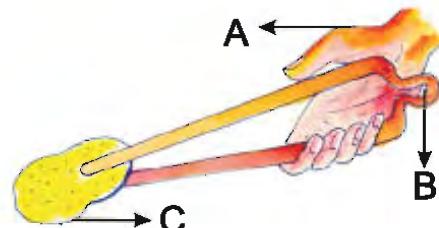
Third order lever

(eg. "Appala iddukki")

Effort - _____

Load - _____

Fulcrum - _____



Some more simple machines also help us to do the work easily.



Inclined plane



Screw jack



Wedge



Picture – 1



Picture – 2

Can you tell which method helps you to pull water easily? Using a pulley or without using a pulley. Why?

Can you write some other uses of pulley?

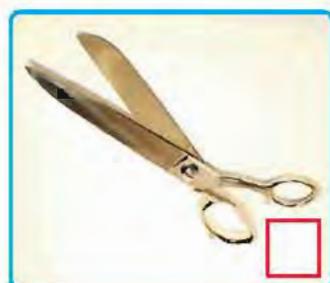
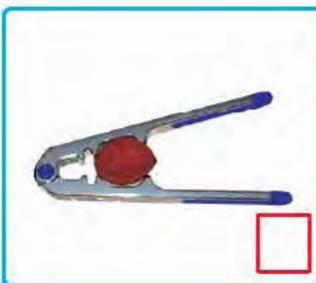
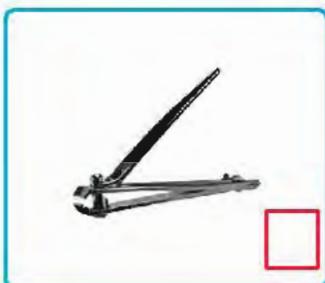
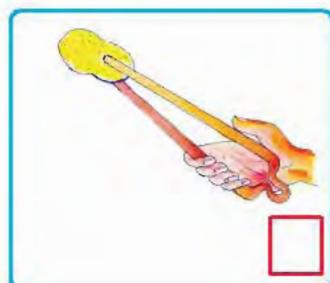
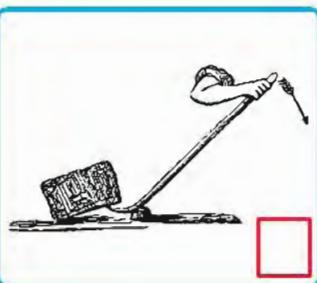


Shall we classify!



Classify the order of the lever

Just write - First order-1, Second order-2, Third order-3



Let us find!



Write the name of the tools and machines given below :







Scissors, Spade, Wedge, Sickle, Axe, Needle, Hammer, Screw Driver, Spanner, Nail.



Shall we classify!

Look at the picture and answer the following:



1. What work are they all involved in ?

2 . Tabulate the tools used by them.

Worker	Work	Tool

The teacher may kindly take the students to a construction site and explain.

Who is he?



He found the principle of levers

Archimedes



Evaluation :



a. Let us find!

Name the simple tools hidden below :



b. Let us think!

Can you write the use of the following tools?

Name of the tool	Use



c. Let us write:



Write down the names of other tools you know.



d. Let us find!



This is a _____ type of lever

Load _____

Fulcrum _____

Effort _____

Name of the tool _____

Used in _____



12. THE WORLD OF TOYS



Write 1 in the box of the toys that can move and 2 for the toys that can't move.



- * Can all toys move by themselves?
- * What will you do to move the toys?



- * We can push or pull the toy to make it move.
- * We need force to change the position.
- * We need energy to apply force.

Toys work by using different types of energy.



When we give key to this car, the spring is wound. When the spring unwinds, the toy moves.

This train uses energy from battery to move.



This car uses remote control to move. We need battery to make the car and the remote work.



Can you see this toy? It works when we clap. This also works on battery.



Fill the table about the toys you know :

Toys which work on keys	Toys that need battery	Toys that work by push	Toys which work on sound

Do you know how these dolls work?



Shall we learn about force by playing games?



We use muscular force to do these activities.

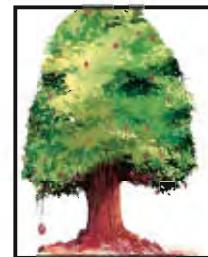




The gravitational force is used for above activities.

The earth attracts all the objects towards itself.

This is called the gravitational force.



A moving car comes to rest after moving through a distance, do you know why?

Frictional force acts on it to bring the car to rest. When the tyre rolls over the floor, frictional force is developed. Frictional force is less on smooth surface and more on rough surface.



The force used in the above activities is the **magnetic force**.



The force used in the above activities is the magnetic force.

Let us do!



1. Draw a maze on the paper plate as shown in the picture.
2. Place a  at the place marked start.
3. Hold a magnet below the plate.
4. Move the  to the centre of the plate using the holder.
5. What made the  move?



Who is he?



Sir Isaac Newton

He discovered the gravitational force.



Evaluation :

a. Let us match



Magnetic force



Gravitational force



Frictional force



b. Let us find!

- ✓ Leaves from trees and objects thrown upwards always come down. Why?
- ✓ Why do we fall when we walk on smooth surfaces?
- ✓ Which force helps us to row the boat?
- ✓ Why do we sprinkle face powder on carom board?



c. Project :

1. Make a toy car using match boxes, empty card board boxes, bottle caps and wires.
2. Use colourful paper and make paper rockets.





Aathirai, her brother Kumaran and their parents went to Mudhumalai sanctuary with uncle Somu. He was working there as a guide. He promised Kumaran for a jungle safari- a trip around forest, on an elephant!

Before jungle safari ...

Kumaran : Uncle, what do you mean by jungle safari?

Uncle Somu: It is a knowledge tour. It helps us to observe about various animals living in their natural habitat, forest.

Kumaran : Uncle, what is a wild life sanctuary?

Uncle Somu: The place where wild animals are kept in the natural surroundings is called a wild life sanctuary.



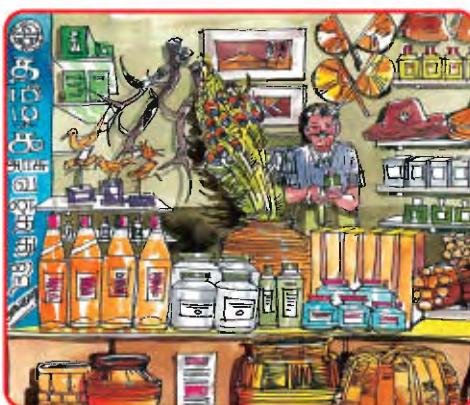
Kumaran : What is the difference between a wildlife sanctuary and a Zoo?

Uncle Somu : In a Zoo, the wild animals are kept in a small artificial place, whereas in a sanctuary, the wild animals are maintained in their natural habitat.

Kumaran : Uncle, why do people call you a guide?

Uncle Somu : Tourists visit sanctuaries and historically important places to know about their speciality. The person who helps them to know more about these places is called a guide.

Talking about all these, they reached the entrance of the sanctuary. A big shop was found.



Various products obtained from the forest were kept on display in the shop. Many of them were for sale. List out the things we get from the forests.

Let us write.

List out the things you see on display in the shop.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



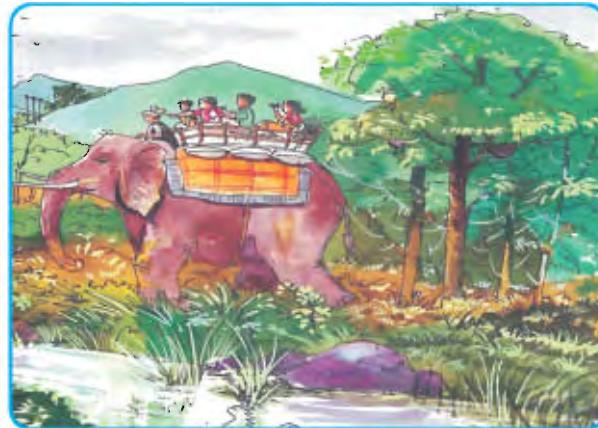
Aathirai : Uncle, From where do we get honey?

Uncle Somu : During jungle safari, I will show you the place where we get honey.

They sat on a big seat above the elephant.

Aathirai : What is the name of the seat we sit on the elephant?

Uncle Somu : It is called Umbari in Tamil and howdah in English.



The products obtained from the forest.

The products obtained from the Animals:



Products obtained from the Plants :



Find out!

Shall we find out the names of the plants from which the products are obtained. (any three)

_____ , _____ , _____



The attention of all the people was drawn to the roaring of a tiger. With a shiver Aathirai questioned "Is there a tiger in this forest?"

"Do not worry. We will keep a safe distance" replied Uncle Somu. Without showing the fear outside, Kumaran asked his uncle, "Are there any other uses of the forest?"

Uses of the Forests :

- Trees help to purify the air.
- Forest gives us rain.
- Trees prevent soil erosion and make the soil fertile.
- Many rare animals live in the forest.

After entering into the forest ...

They were happy to see fragrant sandalwood trees, tall, strong teakwood trees and well grown bamboo bushes.

Uncle Somu said, "We get paper from bamboo tree, ornamental things from sandalwood tree and furniture from teak tree. Wooden materials like window, door, chair are also made from trees.



Kumaran was surprised to know that rubber tree gives us cycle tyre and other rubber products.

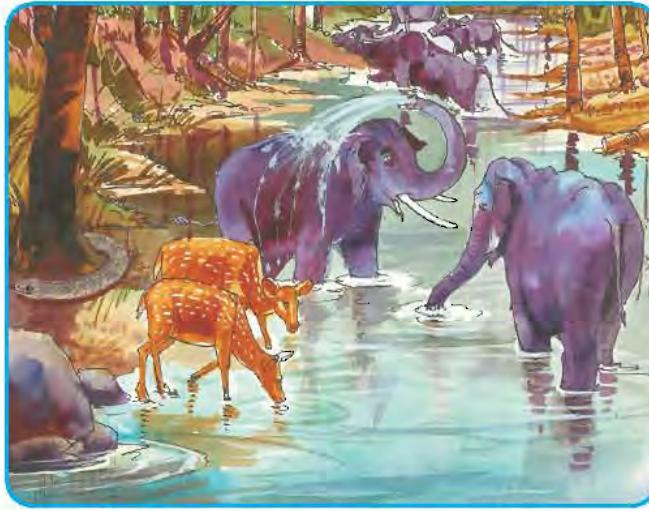


After crossing the bamboo forest, they saw a honey comb in a tall tree covered with leaves. Uncle showed them the honey comb and said, "We get honey from this comb. The honey bees collect nectar from the flowers and store it in the combs".



In the stream

They were amazed to see elephants bathing and deer drinking water, and bisons walking. On the other side of the stream, they saw a python twist and turn. They were astonished at its crawling.



Aathirai : Why are the forests destroyed?

Uncle Somu : Forests are destroyed due to the increase in human population.

- Forests are destroyed for wood to build houses and dams. They are turned into agricultural lands.



- Trees are cut to prepare fragrant sprays, paper, match sticks.
- The irresponsible action of man ends in forest fire which also destroys forests.

Deforestation leads to

- Less rainfall
- Soil erosion
- Rise in temperature
- Loss of habitat of animals
- Extinction of wild animals
- There will be a scarcity of forest things, ornamental, medicinal herbs etc.,

Aathirai : Can't we prevent the forests from being destroyed ?

Uncle Somu : It is our duty to save the forest and the wild animals living in it.

To protect forest we have to

- Plant more trees
- Prevent the hunting of wild animals
- Create awareness on the importance of preserving the forest.

As he completed his explanation the jungle safari came to an end. They again heard the roaring sound of the tiger, while they got down from the seat of the elephant, Kumaran said "Do not worry animals. I promise you that I will protect you and your environment !"

Never destroy wild habitat

Protect forest resources!

To build human habitat!

Protect our natural boundaries.



Who is she?



She planted 3 crore young plants and got
Nobel Prize for Peace in 2004.

Grow trees ! Get rain fall !

Wangari Maathai

Evaluation:



a. Let us find!

Tick the right ones and cross the wrong ones in the following activities :



b. Let us think!



Shall we fill the table with whatever we know about the forest.

S. No.	Plants	Uses	Animals	Uses
1				
2				
3				
4				
5				



Let us collect!

- Reasons for forest fire
- Various things you get from the forest kept in your home.
- Your role in protecting the forests.
- Relationship between forest and rainfall.



Project :

Collect pictures of the wild animals and prepare an album stating a few things about their habitat.



Activity

Veni and her friends went for a field trip with their teacher to a near by sanctuary. They were enjoying the natural scenery. They were also learning a lot about forest and its uses form their teacher. A man who came to the forest on a tour with his friends was smoking. After a while he dropped the cigarette butt at the dry grass. That's how the fire started. Slowly it was spreading across the forest. The children were taken to safety by their teacher in a vehicle. On the way he called the forest officials and informed them about the fire. They took immediate action.

Write a compliant letter to a forest official explaining the above problem.

Letter / Complaint



We have to create awareness about the above problem among our friends and public. Do you agree? Why don't you prepare an awareness poster by writing a slogan?

What is your possible role in preserving the wild life habitat?

